A STUDY OF QUALITY OF LIFE AND PSYCHIATRIC COMORBIDITIES IN FEMALES WITH HYPERTENSIVE DISORDERS OF PREGNANCY

A THESIS SUBMITTED TO

BABA FARID UNIVERSITY OF HEALTH SCIENCES, FARIDKOT (PUNJAB)

IN THE PARTIAL FULFILLMENT

FOR THE AWARD OF DEGREE OF

DOCTOR OF MEDICINE

IN

PSYCHIATRY

MAY 2022

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Dedicated To
My Respected
Teachers, Family
&Friends

ACKNOWLEDGEMENT

This dissertation is one of the most precious achievements of my life. I bow my head to the Almighty for the strength, endurance and perseverance throughout my life. This thesis has been kept on track and been seen through to completion with the support of my teachers, family, well-wishers, friends and colleagues. I would like to thank all those people who made this thesis possible.

To begin with, I thank the most merciful and compassionate, **The Almighty** for giving me this opportunity to undertake this work and the ability to successfully complete it.

Mere words are insufficient to express adequately my profound indebtedness and deep gratitude to my most revered teacher, illustrious guide and genius mentor **Dr. Rupesh Chaudhary,** Professor, Department of Psychiatry, Dayanand Medical College and Hospital, Ludhiana. His meritorious supervision, everlasting inspiration and invaluable encouragement at every step helped me a lot. His limitless patience, crucial and timely advice and meticulous supervision at every step of this study have been a constant source of encouragement to me.

I owe a special gratitude to my co-supervisors **Dr. Shweta Gupta**, Professor, Department of Obstetrics and Gynaecology and **Dr. Narender Pal Jain,** Professor, Department of Medicine, Dayanand Medical College and Hospital, Ludhiana for their constant guidance and support throughout my work. They always raised my morale in the difficult times. Their values will guide me to work harder throughout my life. I am thankful for their unconditional help, affectionate guidance and fervent personal interest from the very inception of the study that contributed to the accomplishment of my task.

My heartiest thanks to **Dr. Ranjive Mahajan,** Professor & Head, Department of Psychiatry, Dayanand Medical College and Hospital, Ludhiana**, Dr. Navkiran Sooch Mahajan,** Professor, Department of Psychiatry, **Dr. Pankaj Kumar**, Associate Professor, Department of Psychiatry, **Dr. Mitthat Miglani**, Assistant Professor, Department of Psychiatry and I offer my sincere thanks to **Dr. B.P. Mishra**, Professor, Department of Clinical

Psychology, **Ms. Palak Upadhyay**, Assistant Professor, Department of Clinical Psychology for their generous and endless support at each and every step.

A special thanks to my senior resident Dr. Nikhil Gautam, Dr. Keerat Kaur and my colleagues Dr. Karanjot Kaur, Dr. Malika Jindal, Dr. Geet Bagri, Dr. Jasleen Kaur Bhalla, Dr. Pretty Duggar, Dr. Garima Salonia, Dr.Tanu, Dr. Deepika Bansal, Dr. Aarti Gupta, Dr. Cherry Sikka and Dr. Ardaaspreet Singh Sandhu for their valuable support.

Mine is not a solitary journey for this noble venture. Words are inadequate to express my gratitude and appreciation for my grandparents **Late Sh. Shivji Ram** and **Late Smt. Vidya Devi**, my parents, **Late Sh. Bhagwan Dass** and **Late Smt. Parveen Bala** for their unconditional love and unending blessings. I am very thankful to my brother **Mr. Shubam Garg** who always stood beside me through my tough times. Their affection, inspiration, constant encouragement and presence have been the guiding light of my life.

No words are enough to thank my dearest friends **Dr. Sandeep Kaur, Dr. Prabhjot Kaur, Dr. Rozy Garg** for their constant support and motivation throughout this research work.

My special thanks to **Mrs. Namita Bansal, Mr. Naveen Bhatia, Mr. Jetinder Negi** and the entire staff of psychiatry and R&D department, DMC&H, for their help in the accomplishment of this study.

Dr. Ruchika

LIST OF ABBREVIATIONS

ACOG	American Congress Of Obstetricians And Gynecologists
ADHD	Attention Deficit Hyperactivity Disorder
aOR	adjusted Odd's Ratio
ASD	Autism Spectrum Disorder
BP	Blood Pressure
CI	Confidence Interval
DSM-IV	Diagnostic And Statistical Manual of mental disorders-Fourth Edition
eNOS	endothelial Nitric Oxide Synthase
GAD	Generalised Anxiety Disorder
HADS-A	Anxiety Subscale of Hospital Anxiety and Depression Scale
HADS-D	Depression Subscale of Hospital Anxiety and Depression Scale
HDP	Hypertensive Disorders of Pregnancy
HRQoL	Health Related Quality of Life
HTN	Hypertension
IQR	Inter Quartile Range
ICD-10	International Classification of Diseases 10^{th} edition
M.I.N.I.	Mini-International Neuropsychiatric Interview
MDD	Major Depressive Disorder
MGH	Massachusetts General Hospital
NO	Nitric Oxide
OCD	Obsessive Compulsive Disorder

OR	Odd’s Ratio
PE	PreEclampsia
QOL	Quality Of Life
RDD	Recurrent Depressive Disorder
SD	Standard Deviation
SF-36	36 Item Short Form Health survey questionnaire
UK	United Kingdom
VEGF	Vascular Endothelial Growth Factor
WHO	World Health Organisation
WHO QOL BREF	World Health Organisation Quality Of Life Instrument-short form
Y-BOCS	Yale-Brown Obsessive Compulsive Scale

ABSTRACT

INTRODUCTION*:* Hypertensive disorders of pregnancy include gestational hypertension, chronic hypertension and preeclampsia with or without severe features. These disorders along with physical health may also have deleterious impact on the mental health of the pregnant females by predisposing them to anxiety, depression and various other psychiatric comorbidities which in turn impede their Quality Of Life. Even in normotensive term pregnant females, psychiatric comorbidities may be present which often remain undiagnosed.

AIMS AND OBJECTIVES: To assess the prevalence of psychiatric co- morbidities and Quality Of Life in females with hypertensive disorders of pregnancy and correlate with normotensive term pregnant females.

MATERIALS AND METHODS*:* This cross-sectional case control study was conducted on 100 pregnant females in age group of 20-40 years with spontaneous conception presenting with hypertensive disorders of pregnancy and 100 antenatal women with spontaneous conception at term (37-41 weeks of pregnancy) with no associated comorbidity and no obvious stressor presenting to Dayanand Medical College & Hospital, Ludhiana over a period of one year from 1st May 2020 to 1st May 2021. Psychiatric comorbidities and Quality Of Life (QOL) was assessed in them using Mini International Neuropsychiatric Interview (M.I.N.I.) questionnaire and WHO-QOL BREF scales respectively.

RESULTS: Prevalence of psychiatric comorbidity was 64% among cases and 38% among controls. There was significant association of psychiatric comorbidity between cases and controls. Mean WHO QOL scores in all domains were higher in cases as compared to controls. Quality Of Life of controls was significantly better in physical (p=0.000) and psychological (p=0.048) domains as compared to cases.

CONCLUSION: There was significant difference in the presence of psychiatric comorbidity between cases and controls. Also the Quality of Life of cases was significantly lower than that of controls and hence needs to be understood and evaluated.

KEYWORDS: Hypertensive pregnant females, normotensive term pregnant females, psychiatric comorbidity, Quality Of Life.

TABLE OF CONTENTS

S. NO.	TOPIC	PAGES
I	INTRODUCTION	1-5
II	AIMS AND OBJECTIVES	6
III	REVIEW OF LITERATURE	7-14
IV	MATERIALS AND METHODS	15-18
V	OBSERVATIONS AND RESULTS	19-64
VI	DISCUSSION	65-74
VII	LIMITATIONS	75
VIII	SUMMARY AND CONCLUSIONS	76-77
	BIBLIOGRAPHY	78-86
	APPENDICES – I - PROFORMA - MASTER CHART	
	APPENDICES – II - APPROVAL LETTER OF THESIS PLAN - THESIS PLAN	

LIST OF TABLES

Table No.	Title	Page No.
1.	DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO AGE GROUP	19
2.	DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF PERIOD OF GESTATION (WEEKS)	20
3.	DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF EDUCATION	21
4.	DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF OCCUPATION	22
5.	DISTRIBUTION OF CASES IN TERMS OF SYSTOLIC BP (mmHg)	24
6.	DISTRIBUTION OF CASES IN TERMS OF DIASTOLIC BP (mmHg)	25
7.	DISTRIBUTION OF CASES IN TERMS OF GESTATIONAL AGE AT DETECTION OF HYPERTENSION (WEEKS)	26
8.	DISTRIBUTION OF CASES ACCORDING TO TYPE OF HYPERTENSIVE DISORDER OF PREGNANCY	27
9.	DISTRIBUTION OF CASES WITH RESPECT TO PSYCHIATRIC COMORBIDITY ON M.I.N.I. (N=100)	29
10.	ASSOCIATION OF PSYCHIATRIC COMORBIDITY IN CASES WITH TYPE OF HYPERTENSIVE DISORDER OF PREGNANCY	30
11.	ASSOCIATION BETWEEN PSYCHIATRIC COMORBIDITY AND MAJOR DEPRESSIVE DISORDER/RECURRENT DEPRESSIVE DISORDER IN CASES (N = 100)	32
12.	ASSOCIATION BETWEEN PSYCHIATRIC COMORBIDITY AND GENERALISED ANXIETY DISORDER IN CASES	33
13.	WHO-QOL-BREF SCORES (TRANSFORMED 0-100) OF CASES	34

14.	ASSOCIATION OF QOL OF CASES WITH TYPE OF HYPERTENSIVE DISORDER OF PREGNANCY	36
15.	ASSOCIATION OF QOL OF CASES WITH PRESENCE OF PSYCHIATRIC COMORBIDITY	38
16.	ASSOCIATION OF PSYCHIATRIC COMORBIDITY BETWEEN CASES AND CONTROLS	40
17.	ASSOCIATION OF MAJOR DEPRESSIVE DISORDER/ RECURRENT DEPRESSIVE DISORDER BETWEEN CASES AND CONTROLS	41
18.	ASSOCIATION OF GENERALISED ANXIETY DISORDER BETWEEN CASES AND CONTROLS	43
19.	COMPARISON OF WHO QOL BREF SCORES (TRANSFORMED SCORES) IN CASES AND CONTROLS	44
20.	DISTRIBUTION OF CONTROLS WITH RESPECT TO PSYCHIATRIC COMORBIDITY ON M.I.N.I.	46
21.	ASSOCIATION BETWEEN PSYCHIATRIC COMORBIDITY AND MAJOR DEPRESSIVE DISORDER/ RECURRENT DEPRESSIVE DISORDER IN CONTROLS	47
22.	ASSOCIATION BETWEEN PSYCHIATRIC COMORBIDITY AND GENERALISED ANXIETY DISORDER IN CONTROLS	48
23.	ASSOCIATION BETWEEN PSYCHIATRIC COMORBIDITY AND OBSESSIVE COMPULSIVE DISORDER IN CONTROLS	49
24.	COMPARISON OF WHO QOL BREF SCORES (TRANSFORMED SCORES) WITH RESPECT TO PRESENCE OF PSYCHIATRIC COMORBIDITY IN CONTROLS	50
25.	ASSOCIATION OF QOL OF CONTROLS WITH MAJOR DEPRESSIVE DISORDER/ RECURRENT DEPRESSIVE DISORDER	52
26.	ASSOCIATION OF QOL OF CONTROLS WITH GENERALISED ANXIETY DISORDER	54

LIST OF FIGURES

Fig. No.	Title	Page No.
1.	DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO AGE GROUP	19
2.	DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF MEAN PERIOD OF GESTATION	20
3.	DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF EDUCATION	21
4.	DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF OCCUPATION	22
5.	DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO LOCALITY	23
6.	DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO FAMILY TYPE	23
7.	DISTRIBUTION OF CASES IN TERMS OF SYSTOLIC BP (mmHg)	24
8.	DISTRIBUTION OF CASES IN TERMS OF DIASTOLIC BP (mmHg)	25
9.	DISTRIBUTION OF CASES IN TERMS OF GESTATIONAL AGE AT DETECTION OF HYPERTENSION (WEEKS)	26
10.	DISTRIBUTION OF CASES ACCORDING TO TYPE OF HYPERTENSIVE DISORDER OF PREGNANCY	27
11.	DISTRIBUTION OF CASES ACCORDING TO PRESENCE OF PSYCHIATRIC COMORBIDITY	28
12.	MEAN WHO-QOL-BREF SCORES OF CASES	35
13.	ASSOCIATION OF QOL OF CASES WITH TYPE OF HYPERTENSIVE DISORDER OF PREGNANCY	37
14.	ASSOCIATION OF QOL OF CASES WITH PRESENCE OF PSYCHIATRIC COMORBIDITY	39

15.	DISTRIBUTION OF PSYCHIATRIC COMORBIDITY BETWEEN CASES AND CONTROLS	40
16.	DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO MAJOR DEPRESSIVE DISORDER/RECURRENT DEPRESSIVE DISORDER	42
17.	DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO GENERALISED ANXIETY DISORDER	43
18.	COMPARISON OF WHO QOL BREF SCORES (TRANSFORMED SCORES) IN CASES AND CONTROLS	45
19.	COMPARISON OF WHO QOL BREF SCORES (TRANSFORMED SCORES) WITH RESPECT TO PRESENCE OF PSYCHIATRIC COMORBIDITY IN CONTROLS	51
20.	ASSOCIATION OF QOL OF CONTROLS WITH MAJOR DEPRESSIVE DISORDER/ RECURRENT DEPRESSIVE DISORDER	53
21.	ASSOCIATION OF QOL OF CONTROLS WITH GENERALISED ANXIETY DISORDER	55

INTRODUCTION

Normotensive term pregnant females and psychiatric comorbidities

Traditionally, pregnancy is considered to be a period of well being and happiness, and was initially thought to protect women from anxiety as well as depression[1]. According to World Health Organisation (WHO), worldwide about 10% of pregnant women and 13% of women who have just given birth experience a mental disorder, primarily depression. In developing countries this is even higher, i.e. 15.6% during pregnancy and 19.8% after childbirth. In severe cases, the mothers' suffering might be so severe that they may even commit suicide[2]. Elevated anxiety levels are present in one out of seven women at 30 weeks postpartum[3]. Gonadal steroid levels have been reported with about 100-fold variation in serum estrogen levels and a 1000-fold change in serum progesterone levels during pregnancy. These changes can aggravate emotional difficulties which results in anxiety, depression, and other psychiatric disorders[4] among pregnant women. According to American Congress of Obstetricians and Gynecologists (ACOG), 14 - 23% of women experience some symptoms of depression during pregnancy[5]. Depression during pregnancy may decrease one's capacity for self-care, precipitating inadequate nutrition, drug or alcohol abuse and poor antenatal clinic attendance, all of which may compromise a woman's physical and mental health. It may reduce optimal fetal monitoring which in turn might restrict the growth and development of the fetus. There is considerable evidence that suggests the role of stressful events, including pregnancy and childbirth, in precipitating or exacerbating mental disorders such as Obsessive Compulsive Disorder (OCD)[6]. It is estimated that >500,000 pregnancies in the United States each year involve women with psychiatric disorders that emerge during the pregnancy[7].

Hypertension in pregnancy

Arterial hypertension during pregnancy is defined by at least two blood pressure values of ≥140/90 mm Hg (preferably 4-6 hours apart). Hypertension complicates 5-7% of all pregnancies and is a major cause of maternal as well as fetal morbidity, particularly when the elevated blood pressure is due to preeclampsia, either alone or "superimposed"

on chronic vascular disease[8]. In India, the prevalence of hypertensive disorders of pregnancy is 7.8% with pre-eclampsia occurring in 5.4% of the study population[9]. According to a recent report of National High Blood Pressure Education Program Working Group on high blood pressure in pregnancy[10], hypertensive disorders of pregnancy are classified as follows;

1. Chronic hypertension – It is defined as hypertension that is present before pregnancy or that is diagnosed before the 20th week of gestation. Hypertension that is diagnosed for the first time during pregnancy and does not resolve postpartum (after delivery) is also classified as chronic hypertension.
2. Preeclampsia-eclampsia– Hypertension (HTN) presenting after 20 weeks of gestation (or could be earlier like in case of trophoblastic diseases such as hydatidiform mole or hydrops) with proteinuria (>300 mg in a 24 hour urine sample or ≥1+ on urine dip test). In the absence of proteinuria, the disease is highly suspected when increased blood pressure occurs along with following symptoms: headache, blurred vision and abdominal pain, or low platelet count and abnormal liver function tests. Eclampsia is defined as the occurrence of seizures in a woman with preeclampsia that cannot be attributed to other causes.
3. Gestational hypertension - It is defined as the elevation of blood pressure detected for the first time after mid pregnancy without proteinuria. This nonspecific diagnosis usually covers women with the preeclampsia syndrome who have not yet manifested proteinuria as well as those who do not have the preeclampsia syndrome. If preeclampsia has not developed yet and blood pressure returns to normal by 12 weeks postpartum, the diagnosis of transient hypertension of pregnancy can be made. But if blood pressure elevation persists even after 12 weeks postpartum, the woman is considered to have chronic hypertension.
4. Preeclampsia superimposed on chronic hypertension- There is abundant evidence that preeclampsia may occur in women who are already hypertensive i.e. those who have chronic hypertension. In such

cases the prognosis for both mother and fetus is much worse than with either condition alone. The diagnosis of superimposed preeclampsia is highly likely with the following findings:

- In women who had hypertension with no proteinuria early in their pregnancy (<20 weeks of gestation), there is new-onset proteinuria which is defined as the urinary excretion of ≥0.3 g protein in a 24-hour specimen.
- In women who had hypertension and proteinuria before 20 weeks of gestation, any of the following is seen:

—sudden increase in proteinuria,

—sudden increase in blood pressure in a woman whose hypertension was previously adequately controlled.

—thrombocytopenia i.e. platelet count <100,000 cells/mm^3,

—increase in alanine aminotransferase or aspartate aminotransferase to abnormal levels[10].

Hypertensive pregnant females and psychiatric comorbidities

Mental health is an essential part of health and well-being. Poor mental health can be detrimental to the woman's welfare as well as her infant's behavior and cognitive development. Women with complicated or high risk pregnancies pregnancies, such as those with hypertensive disorders of pregnancy (HDP), may be at greater risk of poor mental health. It may be undetected, potentially leading to a burden on the woman, her family, the health system, and the society[11].Hypertensive disorders represent the most common medical complication of pregnancy, affecting about 10–22% of pregnancies, and account for the leading cause of maternal death in developing countries. Psychological distress might affect pregnancy outcome adversely through effects of catecholamines on placental perfusion or immune status, or through effects of hypothalamic-pituitary adrenal axis hormones on fetal growth or on the hormones triggering parturition. Distress might alter maternal appetite through the release of glucocorticoids or catecholamines or through various other pathways[2]. High anxiety levels during pregnancy have been associated with lower Apgar scores at five minutes after

birth[12].

Quality Of Life

According to the World Health Organization, Quality Of Life (QOL) is defined as “individuals’ perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. This is a very broad concept, and one that can be influenced in a complex way by the physical health of the subject, his or her psychological state and level of independence, social relations and relationship with the essential elements of his or her environment”. It is therefore based on several objective factors (linked to the quality of the environment and living conditions), and subjective factors (linked to the personal sphere and measurable in terms of satisfaction and well-being). Health status as an essential component of Quality Of Life is referred to as Health-Related Quality Of Life (HRQOL).[13]

Normotensive term pregnant females and Quality Of Life (QOL)

Pregnancy is a period of transition with important physical and emotional changes. Even in uncomplicated pregnancies, these changes could affect the quality of life of pregnant women and affect both maternal and infant health (pregnancy monitoring, pregnancy outcomes, maternal postpartum health, and the psychomotor development of the infant)[13]. QOL of women can be adversely affected by changes that occur during pregnancy, and QOL may be lower compared to that of nonpregnant women of the same age[14] .

Hypertensive pregnant females and Quality Of Life (QOL)

A chronic disease like hypertension during pregnancy can affect the Quality Of Life (QOL) of pregnant women, causing concern that the pathology compromises her health as well as that of her baby. Research on QOL is relevant to the routine practices of health services and it acts as an indicator in clinical trials of specific diseases. Although traditionally used pregnancy outcome measures such as morbidity and mortality rates remain essential but they are not sufficient on their own

because population health should be assessed, not only on the basis of saving lives, but also in terms of improving overall Quality of Life. Over the past decades, various instruments have been developed to measure Health Related Quality of Life in numerous patient populations using 2 basic approaches: generic and disease-specific. While generic measures - for example the SF-36 (Short-Form Item 36) and WHOQOL-BREF World Health Organization's Quality of Life Scale have broad application across different types and severity of diseases; disease-specific measures are designed to assess particular diseases or patient populations[13]. QOL has been assessed in different domains and hypertension has proven to be associated with low QOL of pregnant woman, mainly in health, physical, and psycho-emotional aspects.[14]

To sum up, the psychiatric comorbidities are often underdiagnosed in hypertensive pregnant females and their impact on their QOL is seldom addressed. The normotensive term pregnant females also suffer from mental health problems which adversely affects their QOL and indirectly affects the outcome of infant as well. There is paucity of data in Indian population regarding prevalence of psychiatric comorbidities in the hypertensive pregnant females and its consequent effect on quality of their lives. Our study aimed to assess prevalence of psychiatric comorbidities in hypertensive pregnant females and its effect on their QOL. This will enhance the knowledge on psychiatric aspects of hypertensive disorders of pregnancy and its effect on QOL which will hopefully pave a way to better consultation liaison in the females with hypertensive disorders of pregnancy.

AIMS & OBJECTIVES

- To study the quality of life in females with hypertensive disorders of pregnancy and correlate with normotensive term pregnant females.
- To study the prevalence of psychiatric comorbidities in females with hypertensive disorders of pregnancy and correlate with normotensive term pregnant females.

REVIEW OF LITERATURE

Normotensive pregnancy and psychiatric comorbidities

Pregnancy is the time of growth and hopes and is perceived by many pregnant females as a period of happiness in anticipation of motherhood. Women aspire for a smooth journey in their pregnancy without any complications and a normal fetal development. However, all pregnant females donot experience joy and cheerfulness as some may experience a high levels of anxiety and depression.[4]

Studies done by **O'Hara et al (1990)**[15] and **Evans et al (2001**)[16] estimated that about 10 - 15% of women suffered from depression during pregnancy.

In a study done by Massachusetts General Hospital (MGH) Center for Women's Mental Health in 2006[17], which prospectively followed a group of women with history of major depression across pregnancy, it was found that out of the 82 women who maintained antidepressant treatment throughout their pregnancy, 21 (26%) relapsed as compared to 44 (68%) of the 65 women who discontinued medication. This study estimated that women who discontinued their medication were 5 times more likely to relapse as compared to women who maintained treatment.

In a report published by WHO in 2008[18], it was found that one in three to one in five women in developing countries, and about one in ten in developed countries, have a significant mental health problem during pregnancy and after childbirth. A study done by **Judith Alder et al**[19] reported that mental health problems often remain undiagnosed, as many of their core features such as fatigue and inadequate sleep are also commonly associated with motherhood itself and/or are part of the gender stereotype of what motherhood should include.

The 1997-1999 Report of the Confidential Enquiries into Maternal Deaths in the UK[20] had identified psychiatric disorders, and suicide in particular, as the leading cause of maternal death.

In a systematic review done by **Gavin et al**[21] ,it was estimated that 6.8–12.9% of women experience Major Depressive Disorder (MDD) during pregnancy and/or the postpartum period.

A survey done by **J. Ø. Berle et al**[22] showed that out of the 680 pregnant women,10.4% (71) fulfilled the criteria of anxiety disorder [Anxiety subscale of Hospital Anxiety and Depression Scale (HADS-A) score: mean 3.8, SD 2.9, range 0–18], 2.8% (19) fulfilled the criteria for of depression [Depression subscale of Hospital Anxiety and Depression Scale (HADS-D) score: mean 2.2, SD 2.2, range 0–13], and 1.8% (12)] fulfilled the criteria for comorbid anxiety and depression.

According to research done by the American Congress of Obstetricians and Gynecologists[5], 14 - 23% of women will struggle with some depressive symptoms during pregnancy. A cross-sectional community-based descriptive enquiry[23] was conducted from January to October 2014 in Ghazipur, an urbanized village in East Delhi among 165 antenatal women and it was found that the prevalence of depression, anxiety, and stress was 25.5%, 63%, and 23% respectively.

Comparatively similar rates were seen according to study by **Veronica O'Keane et al**[24], which estimated rates of depression during pregnancy that varied between 7- 15% in economically developed countries to 19- 25% in poorer countries .

In a study done by **Faruk Uguz et al**[25], data was collected from 434 consecutive women in the third trimester of pregnancy who presented to the obstetric outpatient clinics of 2 university research centers (The Meram Medical School of Selçuk University in Konya, Turkey, and The Medical School of Kocatepe University in Afyon, Turkey) and was compared with 58 consecutive non pregnant women diagnosed with Obsessive-compulsive disorder (OCD) who presented to the psychiatric out patient clinics of the same centers. OCD was diagnosed by means of the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). The

Yale - Brown Obsessive - Compulsive Scale (Y-BOCS) was used to determine the severity and types of obsessions and compulsions. The prevalence rate of OCD was found to be 3.5% among women in their third trimester of pregnancy. Two (0.5%) women reported that OCD developed during the second trimester (16th and 24th gestational weeks) of their pregnancy. The most common obsessions were contamination (80%), and symmetry/exactness (60%), whereas the most common compulsions were cleaning/washing (86.7%) and checking (60%). Their mean Y-BOCS score was 25.00 ± 6.25. It was seen that women with pregnancy-onset OCD and some women with previous diagnoses of OCD were found to have obsessions and compulsions with themes focused on the fetus or newborn. The authors concluded that OCD is present relatively frequently among pregnant women during the third trimester of their pregnancy, and it had similar clinical features in both pregnant and non pregnant women.

In two studies addressing the role of pregnancy in OCD, **Neziroglu et al**[26]and **Williams et al**[27] found that pregnancy was associated with onset of OCD in 39% and 13% patients, respectively. It occurred in primigravida in 52% of the patients.

In a study by **Ralph S. Paffenbarger et al**[28], it was seen that the ratio of psychoses to psychoneuroses diagnosed in the prepartum group was 1: 2 but in the postpartum group this ratio was reversed, 2:1. Prepartum mental illnesses were rather evenly scattered by trimester of pregnancy, while postpartum illnesses exhibited a large cluster near the time of delivery. The pattern for first attacks resembled that for the total.

Hypertensive disorders of pregnancy and psychiatric comorbidities

Expectant mothers with hypertension have predisposition towards the development of potentially lethal complications, notably abruptio placentae, disseminated intravascular coagulation, cerebral haemorrhage, hepatic failure, and acute renal failure [10].

According to meta-analyses[29-31], any maternal hypertensive pregnancy disorder, such as chronic or gestational hypertension or preeclampsia, predicted 1.4-fold offspring odds of Autism Spectrum Disorder (ASD) and 1.3-fold odds of Attention Deficit Hyperactivity Disorder (ADHD), with preeclampsia predicting up to 1.5-fold odds of ADHD, Autism Spectrum Disorders, and schizophrenia.

A study by **Walker CK et al**[32], furthermore noted that severity of preeclampsia predicted increased offspring risks of ASD and developmental delay.

Increase in hypothalamic–pituitary–adrenal activity, a major pathophysiological finding associated with depression and anxiety disorders, was regarded as one of the important mechanisms for observed associations between maternal psychiatric illness and adverse pregnancy outcomes, including preeclampsia[33,34].

In a study by **Engelhard et al in 2002**[35], a significant difference was found in the occurrence of depression between women with term Pre Eclampsia (PE) and women at term without PE, and no significant difference between women with preterm PE and women delivering preterm without PE. Contrary to this, the study of **Ingrid Brusse et al(2008)**[36] reported no significant differences in the severity of depression and severity of anxiety between women with PE and normotensive healthy controls. Studies by **Ingrid Brusse et al**[36]and **Martina Baecke et al**[37] used the State-Trait Anxiety Inventory for the measurement of anxiety symptoms and only severity was measured, because the State-Trait Anxiety Inventory is not a diagnostic instrument. Both studies showed higher anxiety severity scores among women with PE, however, these differences were not significant.

In India, a cross-sectional study was conducted by **Sharda Ghoghre et al**[4] on 200 pregnant females in the obstetric wards of hospital of Madhya Pradesh. Mainly two districts were taken in the study- Bhopal and Betul. The sample consisted of 100 cases of pregnant women with

hypertensive disorders while the control group consisted of women without any hypertensive disorder of pregnancy. The study was done over a period of more than one year and it was seen that women with hypertensive disorders of pregnancy had higher level of anxiety in comparison to the control group.

In a case control study by **Masoumeh Kordi et al**[38], conducted on 150 pregnant women with preeclampsia (cases) and 150 healthy pregnant women (controls), who were all referred to health centers and university hospitals of Mashhad in 2014, a significant relationship was seen between anxiety and preeclampsia such that 26.7% of those with preeclampsia and 10.7% of the control group had anxiety.

A cross-sectional analysis of inpatient hospitalizations was conducted in United States of America from 2002 to 2014 using the Nationwide Inpatient Sample[39], the largest publicly available all payer inpatient database in the United States and it was found that among the over 58-million hospitalizations during the study period (2002–2014), there were 2,346,619 (3.99%) cases of Hypertensive Disorders of Pregnancy (HDP), 1,117,857 (1.90%) cases of depression, and 63,081 (0.11%) cases of co-occurring depression and HDP. During the study period, the rate of depression continued to rise among pregnancy-related hospitalizations in women with and without HDP. Among women without HDP, the rate of depression increased by 23% from 2002 to 2004 and continued to increase by 6.5% annually from 2004 to 2014 while comparatively more i.e. 8.8% annual increase in depression was noted among women with HDP.

Oates et al (2003)[40] identified psychiatric morbidity as the leading cause of maternal death in the perinatal period while **Appleby et al (1998)**[41] in their study reported an 80 fold increase in suicide in the first year postpartum in women with severe mental health conditions.

Viguera et al (2007)[45]in a prospective study of pregnant bipolar women reported that overall risk of at least one recurrence in

pregnancy was 70% with a two fold greater risk for women who had discontinued their mood stabilizer.

In a survey conducted by **Naomi Schneid - Kofman et al**[43], data was collected from 181,479 deliveries out of which 607 (0.3%) women had a history of psychiatric illness and 180,872 did not have any known psychiatric illness. Schizophrenia (n= 67, 11%), anxiety (n= 127, 21%), and depressive disorders (n= 109, 18%) were the most common psychiatric disorders. Neurosis was noted in 19 (3%) women, and psychosis in 1 woman. In 254 women, a Generalised psychiatric illness was noted without any specific diagnosis. Adverse pregnancy outcomes were noted among psychiatric patients; perinatal mortality was higher (3.5% vs 1.4%, p=0.001) as well as congenital malformations (7.1% vs 4.9%, p= 0.015), lower Apgar scores of less than 7 at 1 min (7.3% vs 4.3%, p=0.001) and less than 7 at 5 min (1.4% vs 0.6%, p= 0.017), and a higher rate of fetal distress (3.5% vs 1.8%, p= 0.003) were found in the women with psychiatric illness. Low birth weight was significantly more common in the psychiatric group (15.8% vs 9.6%; p<0.001).

Two meta-analyses by **Sophie Grigoriadis et al**[44] and **Nancy K Grote et al**[45] assessed the association between antenatal depression and fetal and neonatal outcomes, the reports of which depicted that symptoms of antenatal depression were associated with an increased risk for premature delivery (<37 weeks of gestation).

Normotensive pregnant females and Quality Of Life (QOL)

In a study done by **Deborah Da Costa et al,**[46] 245 pregnant women were included and Short Form Health Survey SF-36 was administered to evaluate and identify determinants of health related quality of life (HRQoL) during pregnancy. The results showed that the pregnant women in their third trimester scored significantly lower on 5 of the 8 SF-36 dimensions including physical function, role limitation due to physical health, bodily pain, vitality, and social function compared to age-appropriate normative means (non pregnant women). Similarly, in a study done by **Nakamura et al**[47] in Japan, it was seen that the domains

of social functioning and role–emotional had significantly lower scores for pregnant patients than the non-pregnant reference group.

The study done by **Chan et al in 2010**[48] also found that pregnant women had, on an average, statistically lower QOL scores ($p < 0.001$) compared to the general population, excepting general health ($p = 0.1$). Similarly, **Elsenbruch et al**[49] found a reduced Quality Of Life, physically, when compared to German women of the same age ($p < 0.001$).

The main factors associated with high QOL in pregnancy were assessed in a systematic review done by **Nolwenn Lagadec et al**[50] in 2018. These factors were the mean maternal age, a high educational level, high income, being primiparous, being in the first trimester of pregnancy, having positive feelings towards pregnancy, high social support from family and friends, low stress and anxiety, and doing physical exercise.

Hypertensive pregnant females and Quality Of Life

In a cross-sectional prospective study conducted from December 2010 to December 2011 by **Kellly Patrícia Medeiros Falcão et al**[51], Quality Of Life (QOL) and its domains were assessed for hypertension. Lower scores were observed in Hypertensive Group in all domains compared to the Control Group, showing that hypertension is associated with low QOL of pregnant woman, mainly in health, physical and psycho-emotional aspects. A statistically significant difference was observed in the total QOL index ($p = 0.003$), in the health and functioning ($p = 0.001$) and psycho-emotional ($p = 0.01$) domains. No statistically significant differences were observed in the socioeconomic and family domains.

A prospective, longitudinal study was performed by **Eva Mautner et al**[52] in 2009 to explore the influence of hypertensive disorders, gestational diabetes, and preterm birth as risk factors for Health-Related Quality Of Life (HRQOL) and depressive symptoms during late

pregnancy and postpartum. Ninety women were recruited in the study including 29 controls. HRQOL was measured using the WHO-QOL-BREF questionnaire. Depressive symptoms were assessed using the Edinburgh Postnatal Depression Scale. It was found that women of the preterm group had statistically significant higher depression scores and lower HRQOL scores on the physical domain during pregnancy than those without complications. Women with hypertensive disorders showed the second most depressive symptoms. Physical and global HRQOL improved and depressive symptoms decreased significantly from late pregnancy and early postpartum period to late postpartum.

To summarise, as per the existing literature, psychiatric co-morbidities are frequently seen in hypertensive pregnant females which detiorates their QOL in physical, psychological, social and environmental domains of health. Similarly, the normotensive pregnant females also suffer from mental health problems which impacts their QOL. As there is dearth of Indian data on this concern, our study aims to assess the prevalence of psychiatric co-morbidities and their impact on QOL in hypertensive pregnant females and compare it with normotensive pregnant females. This will guide us in better approach to the pregnant females (both hypertensive and normotensive) by their early screening and timely psychiatric intervention which will improve their mental health and subsequently their QOL.

MATERIALS AND METHODS

SOURCE OF DATA

The diagnosed cases of hypertensive disorders of pregnancy (cases) and normotensive term pregnant females (controls) presenting to Obstetrics and Gynaecology (Outpatient and Inpatient Department) of Dayanand Medical College & Hospital, Ludhiana over a period of one year from 1st May 2020 to 1st May 2021 were included in the study after taking an informed written consent from the patients.

METHOD OF COLLECTION OF DATA

SAMPLE COLLECTION- This hospital based, cross-sectional case control study included 100 pregnant females in age group of 20-40 years with spontaneous conception presenting with hypertensive disorders of pregnancy (cases) and 100 antenatal women with spontaneous conception at term (37-41 weeks of pregnancy) with no associated comorbidity and no obvious stressor (controls) presenting to Dayanand Medical College & Hospital, Ludhiana over a period of one year from 1st May 2020 to 1st May 2021.

FOR CASES

INCLUSION CRITERIA:

1. Antenatal females with spontaneous conception presenting with hypertensive disorders of pregnancy to Obstetrics and Gynaecology (Outpatient and Inpatient Department) of Dayanand Medical College & Hospital, Ludhiana over a period of one year from 1st May 2020 to 1st May 2021.
2. Age group between 20-40years.
3. Females who had given consent for the study**.**

EXCLUSION CRITERIA:

1) Pregnant females with any obstetric or gynaecological disorder other than hypertensive disorder of pregnancy.
2) Subjects not willing to participate.
3) Pregnant females with any other stressors affecting their quality of life and causing psychiatric comorbidity e.g. infertility, domestic

violence, marital disharmony, bad obstetrical history, professional or economic instability, diabetes mellitus.

4) Pregnant females with eclampsia.

FOR CONTROLS

INCLUSION CRITERIA

1) Antenatal women with spontaneous conception at term (37-41 weeks of pregnancy) without any associated comorbidity and any obvious stressor presenting to Outpatient and Inpatient Department of Obstetrics and Gynaecology at Dayanand Medical College & Hospital, Ludhiana over a period of one year from 1st May 2020 to 1st May 2021.
2) Age group between 20-40 years of age.
3) Those who had given consent for the study.

EXCLUSION CRITERIA

1) Antenatal women presenting at less than 37 weeks or more than 41 weeks of pregnancy or with any associated comorbidity or stressor.
2) Those who had not given consent for the study.

TOOLS

1. **Mini International Neuropsychiatric Interview questionnaire**[53] for the assessment of the psychiatric co-morbidities. The Mini-International Neuropsychiatric Interview (M.I.N.I.) version 5.0.0 is a short structured diagnostic interview, developed jointly by psychiatrists and clinicians in the United States and Europe, for DSM-IV and International Classification of Diseases 10th edition (ICD-10) psychiatric disorders. It is divided into 16 modules- identified by letters, each corresponding to a diagnostic category. With an administration time of approximately 15 minutes, it was designed to meet the need for a short but accurate structured psychiatric interview for multicenter clinical trials. Overall, the MINI diagnoses are characterised by good kappa values. The operating characteristics of the MINI are also good. Sensitivity is 0.70 or greater for all but three values (dysthymia, obsessive compulsive disorder and current drug dependence). Specificities, negative predictive values and efficiency scores are 0.85

or higher across all of the diagnoses. Positive predictive values are high for major depression, lifetime mania, current and lifetime panic disorder, lifetime agoraphobia, lifetime psychotic disorder, anorexia and Post-Traumatic Stress Disorder (PTSD). Inter-rater and test-retest reliabilities are good.

2. The Quality Of Life was assessed by **WHO-Quality Of Life Assessment – BREF scale**[54]**.** It consists of 26 items. Each item uses a Likert-type five-point scale. These items are distributed in four domains. The 4 domains of QOL are:-

(a) Physical health and level of independence (seven items assessing areas such as presence of pain and discomfort; dependence on substances or treatments; energy and fatigue; mobility; sleep and rest; activities of daily living; perceived working capacity).

(b) Psychological well being (eight items assessing areas such as affect, both positive and negative self concept, higher cognitive functions, body image and spirituality).

(c) Social relationships (three items assessing areas such as social contacts, family support and ability to look after family; sexual activity).

(d) Environment (eight items assessing areas such as freedom; quality of home environment; physical safety and security and financial status; involvement in recreational activity; health and social care: quality and accessibility).

Domain scores are scaled in a positive direction (higher scores denote higher quality of life). The mean score of items within each domain is used to calculate the domain score. Mean scores are then multiplied by 4 in order to make domain scores comparable with the scores used in the WHOQOL-100.The WHOQOL-BREF has been shown to display good discriminant validity, content validity and test-retest reliability. Domain scores produced by the WHOQOL-BREF have been shown to correlate at around 0.9 with the WHOQOL-100 domain scores.

3. Socio demographic proforma included the name of the patient, age, gender, Medical Records Department number, period of gestation, education, occupation, husband's-name, age, education and occupation, monthly income, address, contact no., locality, type of

family, presence of stressor if any, gestational age at detection of hypertension, oral/intravenous medications administered, type of hypertensive disorder if present, psychiatric comorbidities on M.I.N.I., score on WHOQOL-BREF.

OBSERVATIONS AND RESULTS

TABLES AND FIGURES

TABLE 1: DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO AGE GROUP

Age Group	Group		
	Case	Control	Combined
20-25 Years	10 (10.0%)	17 (17.0%)	27 (13.5%)
25-30 Years	39 (39.0%)	48 (48.0%)	87 (43.5%)
30-35 Years	33 (33.0%)	24 (24.0%)	57 (28.5%)
35-40 Years	18 (18.0%)	11 (11.0%)	29 (14.5%)
Total	100 (100.0%)	100 (100.0%)	200 (100.0%)

Table shows majority of cases and controls were in age group 25-30 years.

FIGURE 1: DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO AGE GROUP

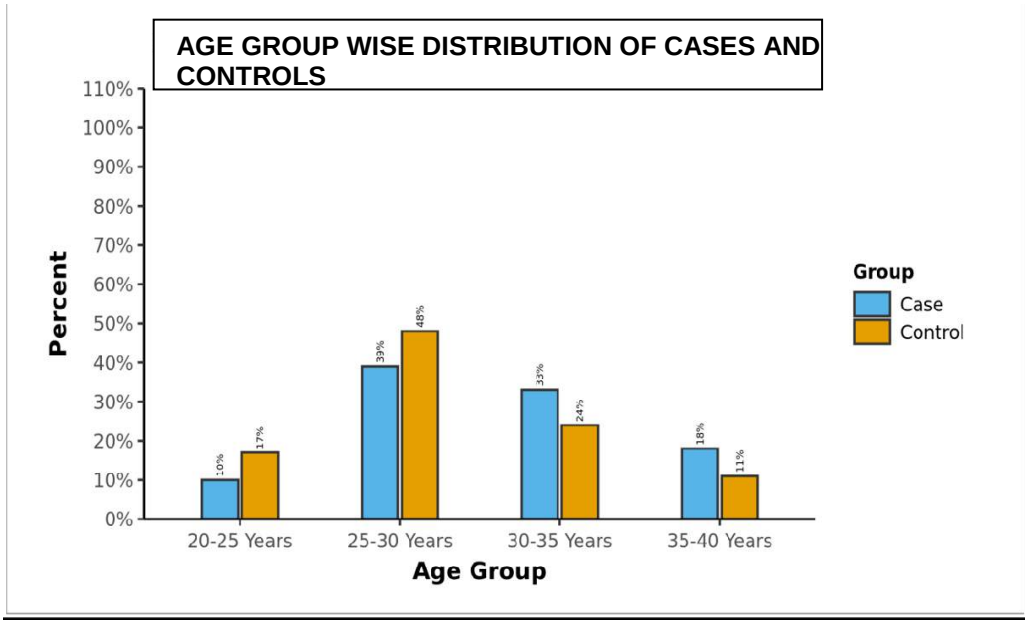

Figure shows majority of cases and controls belonged to age group 25-30 years.

TABLE 2: DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF PERIOD OF GESTATION (WEEKS)

Period Of Gestation (Weeks)	Group	
	Case	Control
Mean (SD)	30.18 (5.67)	38.11 (0.82)
Median (IQR)	30.1 (27-35.02)	38.2 (37.3-38.7)
Range	13.1 - 39.3	37 - 41

Table shows mean period of gestation in cases was 30.18±5.67 weeks while that in controls was 38.11±0.82 weeks.

FIGURE 2: DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF MEAN PERIOD OF GESTATION

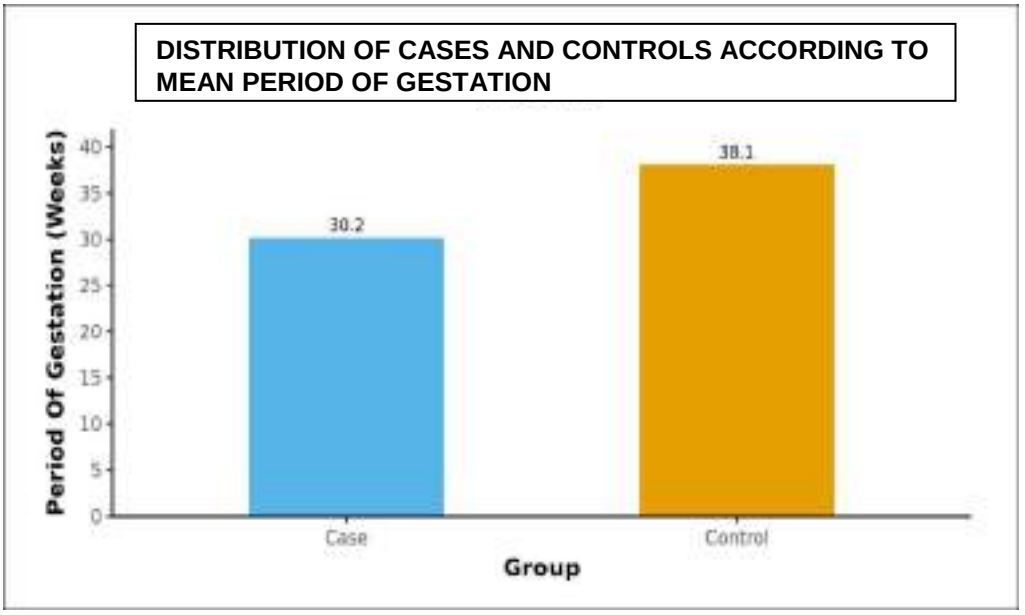

Figure shows mean period of gestation in cases was 30.2 weeks while that in controls was 38.1 weeks.

TABLE 3: DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF EDUCATION

Education	Group		
	Case	Control	Combined
Illiterate	16 (16.0%)	25 (25.0%)	41 (20.5%)
Upto Matriculation	15 (15.0%)	19 (19.0%)	34 (17.0%)
Matriculation	16 (16.0%)	6 (6.0%)	22 (11.0%)
Higher-Secondary/Diploma	31 (31.0%)	23 (23.0%)	54 (27.0%)
Graduate/Post-Graduate	22 (22.0%)	27 (27.0%)	49 (24.5%)
Total	100 (100.0%)	100 (100.0%)	200 (100.0%)

Table shows majority of cases and controls were educated. Only 16% cases and 25% controls were uneducated.

FIGURE 3: DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF EDUCATION

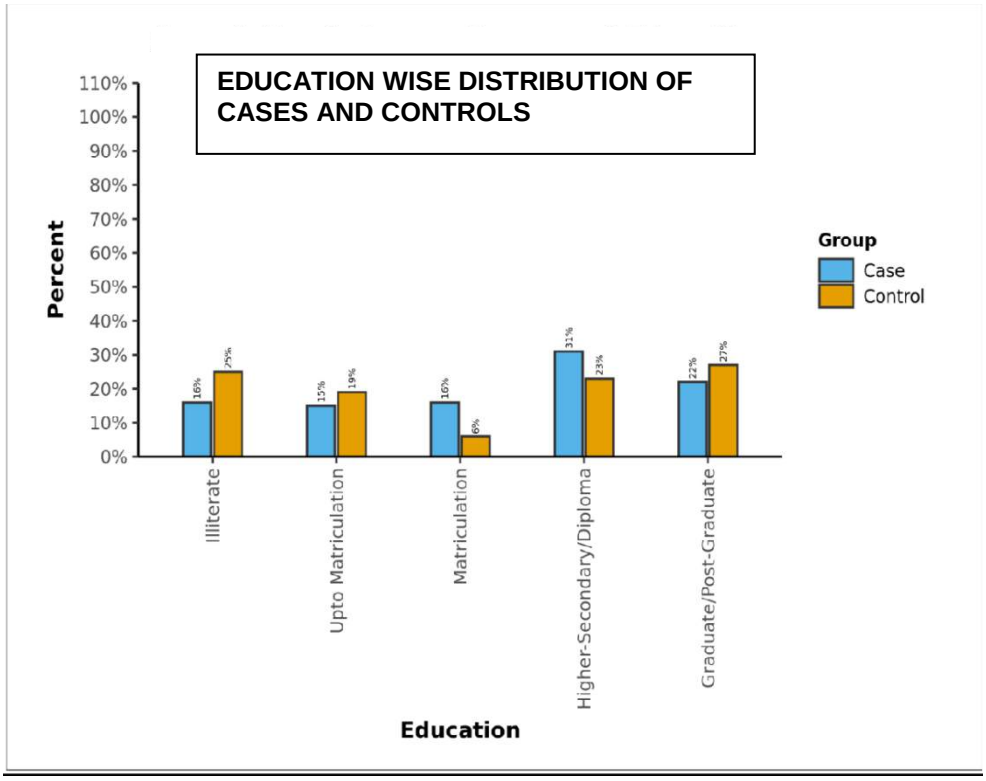

Figure shows majority of cases and controls were educated.

TABLE 4: DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF OCCUPATION

Occupation	Group		
	Case	Control	Combined
Homemaker	74 (74.0%)	68 (68.0%)	142 (71.0%)
Semi-Skilled Worker	6 (6.0%)	5 (5.0%)	11 (5.5%)
Skilled Worker	2 (2.0%)	5 (5.0%)	7 (3.5%)
Professional	18 (18.0%)	22 (22.0%)	40 (20.0%)
Total	100 (100.0%)	100 (100.0%)	200 (100.0%)

Table shows majority of cases and controls were homemakers.

FIGURE 4: DISTRIBUTION OF CASES AND CONTROLS IN TERMS OF OCCUPATION

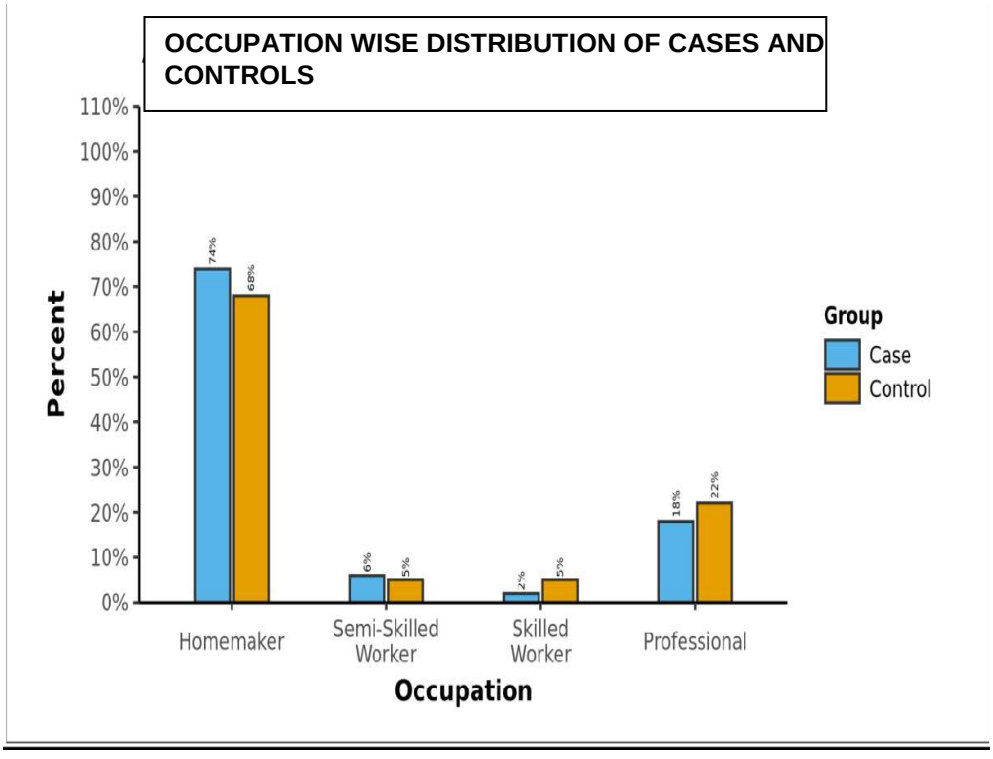

Figure shows majority of cases and controls were homemakers

FIGURE 5: DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO LOCALITY

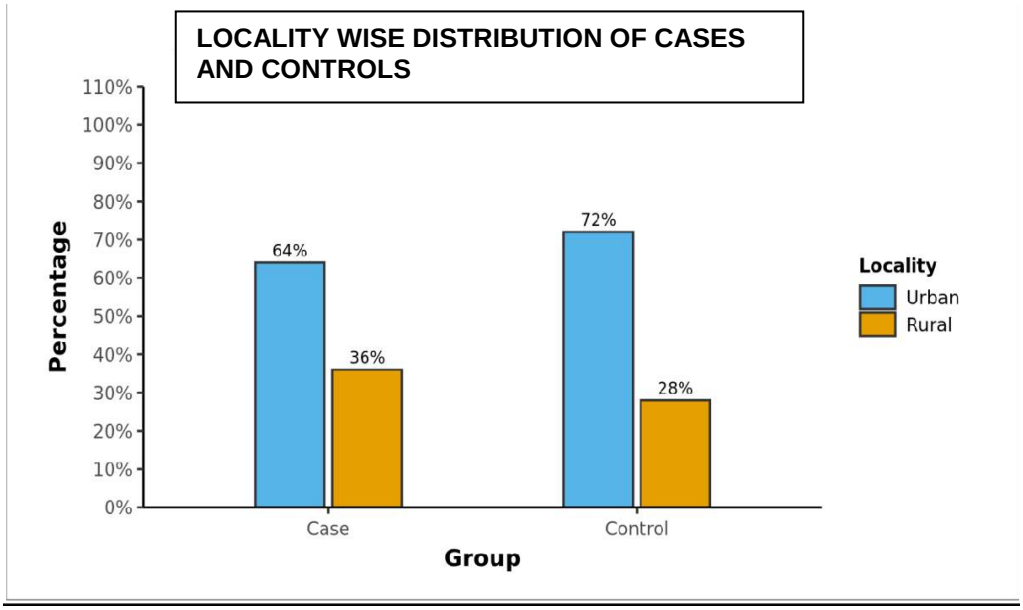

Figure shows majority cases and controls belonged to urban locality.

FIGURE 6: DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO FAMILY TYPE

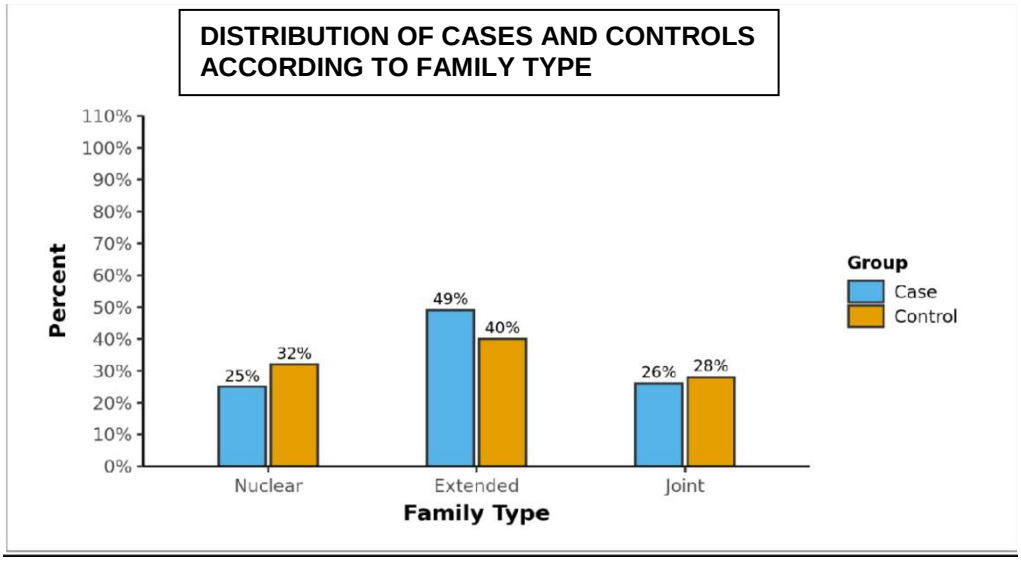

Figure shows majority of cases and controls belonged to extended type family.

TABLE 5: DISTRIBUTION OF CASES IN TERMS OF SYSTOLIC BP (mmHg)

Systolic BP(mmHg)	Frequency	Percentage	95% CI
140-159	80	80.0%	70.6% - 87.1%
≥160	20	20.0%	12.9% - 29.4%

Table shows 80% of the cases had Systolic BP: 140-159 mmHg while 20.0% of the cases had Systolic BP:≥160 mmHg.

FIGURE 7: DISTRIBUTION OF CASES IN TERMS OF SYSTOLIC BP (mmHg)

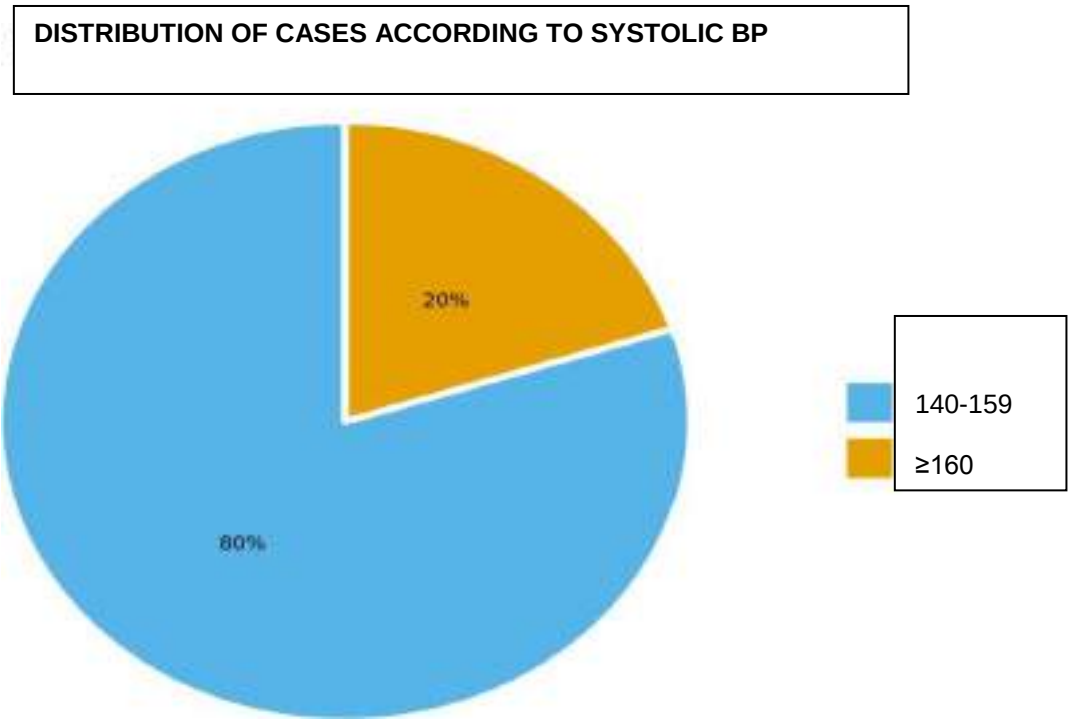

Figure shows majority of the cases had systolic BP 140-159 mmHg.

TABLE 6: DISTRIBUTION OF CASES IN TERMS OF DIASTOLIC BP (mmHg)

Diastolic BP(mmHg)	Frequency	Percentage	95% CI
90-109	80	80.0%	70.6% - 87.1%
≥110	20	20.0%	12.9% - 29.4%

Table shows 80% of the cases had Diastolic BP:90-109 mmHg while 20.0% of the cases had Diastolic BP:≥110 mmHg.

FIGURE 8: DISTRIBUTION OF CASES IN TERMS OF DIASTOLIC BP (mmHg)

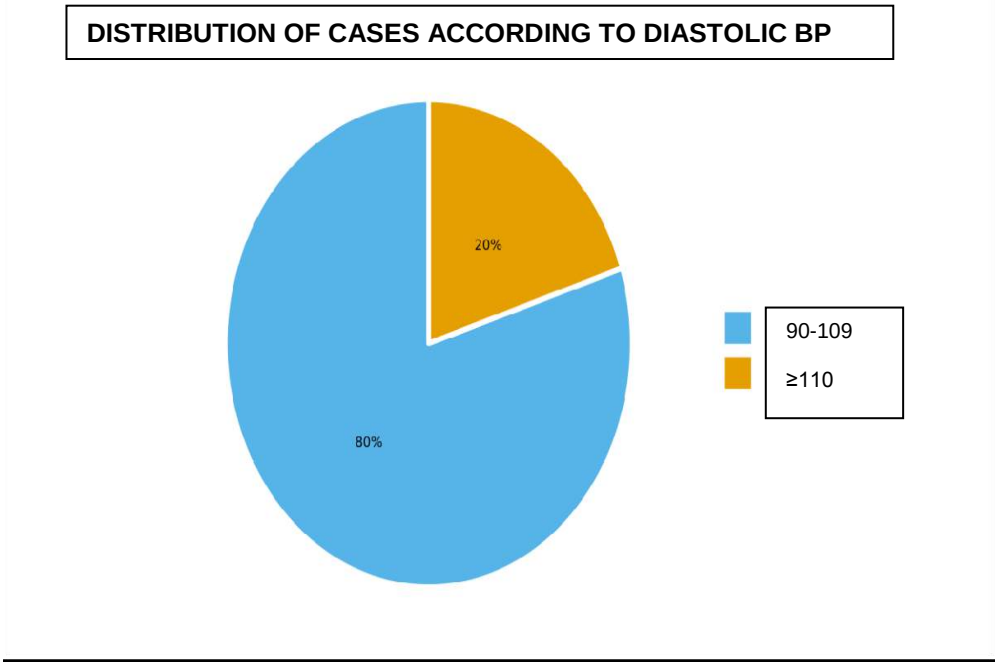

Figure shows majority of cases had diastolic BP: 90-109 mmHg.

TABLE 7: DISTRIBUTION OF CASES IN TERMS OF GESTATIONAL AGE AT DETECTION OF HYPERTENSION (WEEKS)

Gestational Age at Detection Of Hypertension (Weeks)	Frequency	Percentage	95% CI
<20	29	29.0%	20.6% - 39.1%
20-24	36	36.0%	26.8% - 46.3%
25-28	29	29.0%	20.6% - 39.1%
29-32	5	5.0%	1.9% - 11.8%
33-36	1	1.0%	0.1% - 6.2%

Table shows majority of cases had gestational age 20-24 weeks at detection of hypertension.

FIGURE 9: DISTRIBUTION OF CASES IN TERMS OF GESTATIONAL AGE AT DETECTION OF HYPERTENSION (WEEKS)

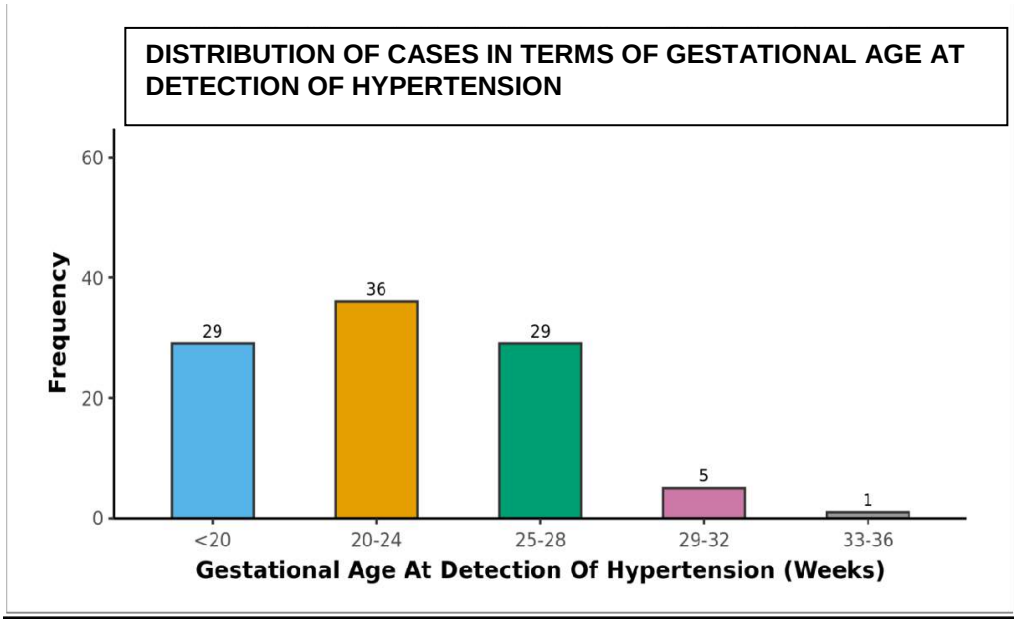

Figure shows majority of cases (36%) had gestational age 20-24 weeks at detection of hypertension.

TABLE 8: DISTRIBUTION OF CASES ACCORDING TO TYPE OF HYPERTENSIVE DISORDER OF PREGNANCY

Hypertensive Disorder Of Pregnancy	Frequency	Percentage	95% CI
Pre-Eclampsia	47	47.0%	37.0% - 57.2%
Chronic Hypertension	29	29.0%	20.6% - 39.1%
Gestational Hypertension	24	24.0%	16.3% - 33.8%

Table shows majority of cases (47%) had pre-eclampsia followed by chronic hypertension (29%) and gestational hypertension (24%).

FIGURE 10: DISTRIBUTION OF CASES ACCORDING TO TYPE OF HYPERTENSIVE DISORDER OF PREGNANCY

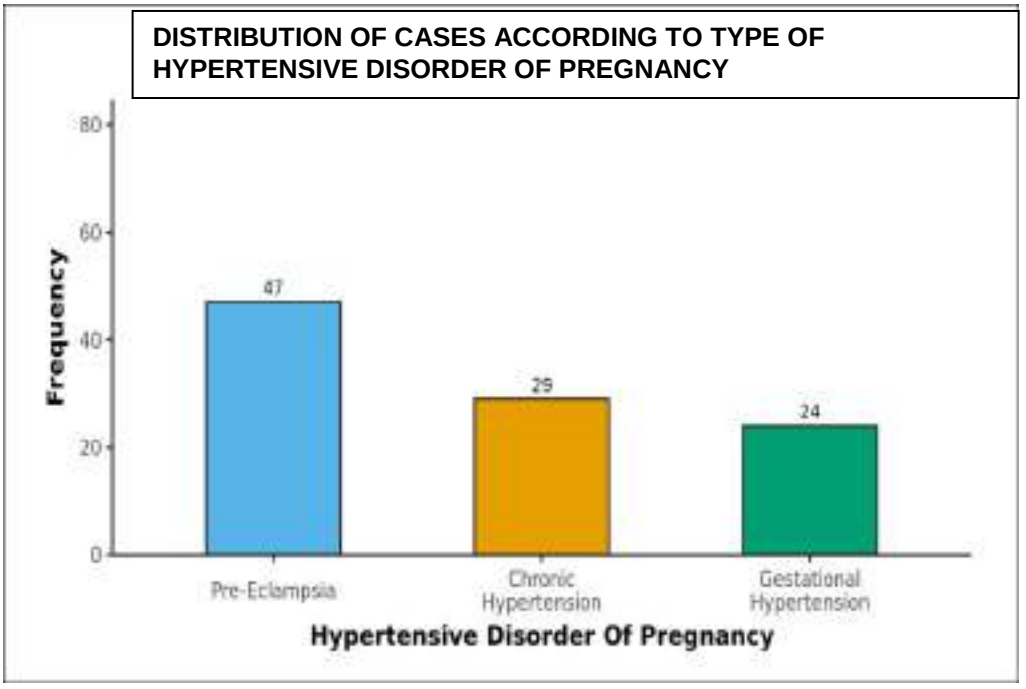

Figure shows majority of patients had pre- eclampsia.

FIGURE 11: DISTRIBUTION OF CASES ACCORDING TO PRESENCE OF PSYCHIATRIC COMORBIDITY

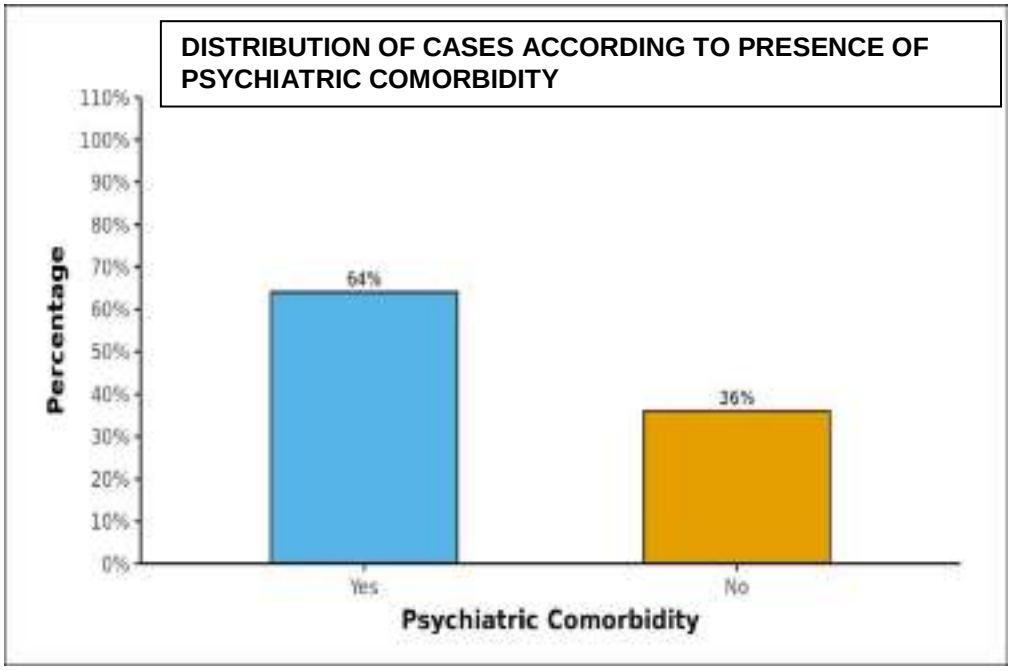

Figure shows 64% of cases had psychiatric comorbidity.

TABLE 9: DISTRIBUTION OF CASES WITH RESPECT TO PSYCHIATRIC COMORBIDITY ON M.I.N.I. (N=100)

Psychiatric Morbidity	Yes
Psychiatric Comorbidity	64 (64.0%)
Major Depressive Disorder/Recurrent Depressive Disorder	34 (34.0%)
Dysthymia	0 (0.0%)
Suicidality	0 (0.0%)
Manic/Hypomanic Episode	1 (1.0%)
Panic Attack/Disorder	1 (1.0%)
Agoraphobia	2 (2.0%)
Social Phobia/Social Anxiety Disorder	5 (5.0%)
Obsessive Compulsive Disorder	5 (5.0%)
Posttraumatic Stress Disorder	0 (0.0%)
Alcohol Abuse/Dependence	0 (0.0%)
Substance Abuse/Dependence (Non Alcohol)	0 (0.0%)
Psychotic Disorders/Mood Disorder With Psychotic Features	2 (2.0%)
Anorexia Nervosa	0 (0.0%)
Bulimia Nervosa	0 (0.0%)
Generalised Anxiety Disorder	24 (24.0%)
Antisocial Personality Disorder	0 (0.0%)

Table shows out of 64% cases who had psychiatric comborbidity, majority had major Depressive Disorder/Recurrent Depressive Disorder – 34% followed by Generalised Anxiety Disorder – 24%

Table 10: ASSOCIATION OF PSYCHIATRIC COMORBIDITY IN CASES WITH TYPE OF HYPERTENSIVE DISORDER OF PREGNANCY

Parameters	Hypertensive Disorder Of Pregnancy			*p* value
	Pre-Eclampsia (n = 47)	Chronic Hypertension (n = 29)	Gestational Hypertension (n = 24)	
Major Depressive Disorder/Recurrent Depressive Disorder (Yes)	16 (34.0%)	13 (44.8%)	5 (20.8%)	*0.1863*
Dysthymia (Yes)	0 (0.0%)	0 (0.0%)	0 (0.0%)	*1.0003*
Suicidality (Yes)	0 (0.0%)	0 (0.0%)	0 (0.0%)	*1.0003*
Manic/Hypomanic Episode (Yes)	0 (0.0%)	0 (0.0%)	1 (4.2%)	*0.2402*
Panic Attack/Disorder (Yes)	1 (2.1%)	0 (0.0%)	0 (0.0%)	*1.0002*
Agoraphobia (Yes)	1 (2.1%)	0 (0.0%)	1 (4.2%)	*0.7252*
Social Phobia/Social Anxiety Disorder (Yes)	1 (2.1%)	2 (6.9%)	2 (8.3%)	*0.5082*
Obsessive Compulsive Disorder (Yes)	3 (6.4%)	1 (3.4%)	1 (4.2%)	*1.0002*
Posttraumatic Stress Disorder (Yes)	0 (0.0%)	0 (0.0%)	0 (0.0%)	*1.0003*
Alcohol Abuse/Dependence (Yes)	0 (0.0%)	0 (0.0%)	0 (0.0%)	*1.0003*
Substance Abuse/Dependence (Non Alcohol) (Yes)	0 (0.0%)	0 (0.0%)	0 (0.0%)	*1.0003*
Psychotic Disorders/Mood Disorder With Psychotic Features (Yes)	2 (4.3%)	0 (0.0%)	0 (0.0%)	*0.4972*
Anorexia Nervosa (Yes)	0 (0.0%)	0 (0.0%)	0 (0.0%)	*1.0003*

Bulimia Nervosa (Yes)	0 (0.0%)	0 (0.0%)	0 (0.0%)	*1.0003*
Generalised Anxiety Disorder (Yes)	16 (34.0%)	4 (13.8%)	4 (16.7%)	*0.0843*
Antisocial Personality Disorder (Yes)	0 (0.0%)	0 (0.0%)	0 (0.0%)	*1.0003*

Table shows there was no significant association ($p>0.05$) of psychiatric comorbidity in hypertensive pregnant females with type of hypertensive disorder of pregnancy.

TABLE 11: ASSOCIATION BETWEEN PSYCHIATRIC COMORBIDITY AND MAJOR DEPRESSIVE DISORDER/RECURRENT DEPRESSIVE DISORDER IN CASES (N = 100)

Major Depressive Disorder/ Recurrent Depressive Disorder	Psychiatric Comorbidity			Chi-Squared Test	
	Yes	No	Combined	χ^2	*p Value*
Yes	34 (53.1%)	0 (0.0%)	34 (34.0%)	28.977	**<0.001**
No	30 (46.9%)	36 (100.0%)	66 (66.0%)		
Total	64 (100.0%)	36 (100.0%)	100 (100.0%)		

Among cases, out of the patients who had psychiatric comorbidity, significant number of them had Major Depressive Disorder/Recurrent Depressive Disorder.

TABLE 12: ASSOCIATION BETWEEN PSYCHIATRIC COMORBIDITY AND GENERALISED ANXIETY DISORDER IN CASES

Generalised Anxiety Disorder	Psychiatric Comorbidity			Chi-Squared Test	
	Yes	No	Combined	χ2	*p* Value
Yes	24 (37.5%)	0 (0.0%)	24 (24.0%)	17.763	**<0.001**
No	40 (62.5%)	36 (100.0%)	76 (76.0%)		
Total	64 (100.0%)	36 (100.0%)	100 (100.0%)		

Among cases, out of the patients who had psychiatric comorbidity, significant number of them had Generalised Anxiety Disorder.

TABLE 13: WHO-QOL-BREF SCORES (TRANSFORMED 0-100) OF CASES

WHO QOL BREF	N	MINIMUM	MAXIMUM	MEAN	STANDARD DEVIATION
Physical domain	100	31	75	53.42	11.92
Psychological domain	100	31	88	60.04	13.68
Social relationship domain	100	31	81	64.79	12.52
Environmental domain	100	50	94	70.57	6.78

Table shows mean scores on domains of QOL of hypertensive pregnant patients – higher mean scores on social relationship and environmental domains as compared to physical and psychological domains.

FIGURE 12: MEAN WHO-QOL-BREF SCORES OF CASES

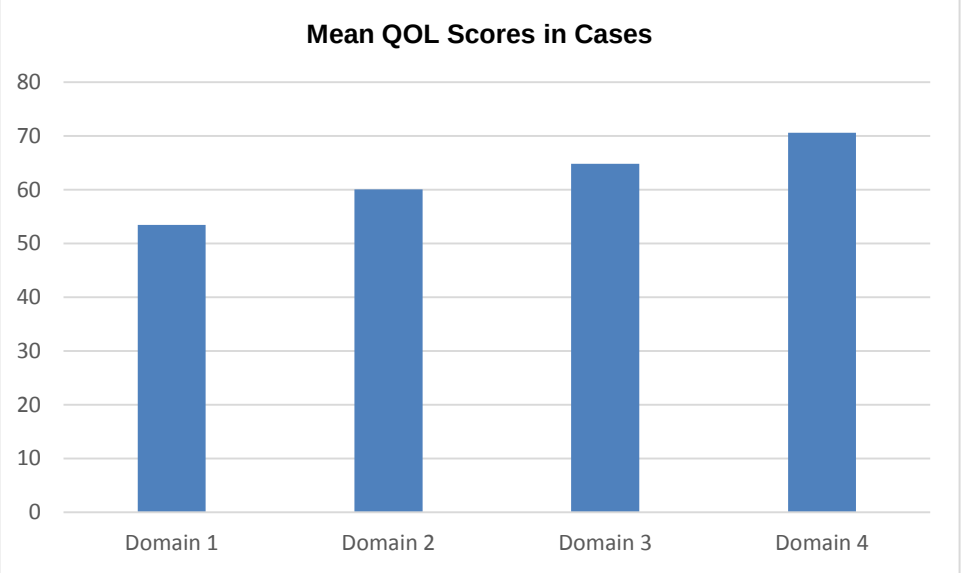

Figure shows mean scores of QOL in cases were more on social relationship and environmental domains as compared to physical and psychological domains.

TABLE 14: ASSOCIATION OF QOL OF CASES WITH TYPE OF HYPERTENSIVE DISORDER OF PREGNANCY

WHO QOL BREF	Hypertensive Disorder Of Pregnancy							
	Pre- Eclampsia		Chronic Hypertension		Gestational Hypertension		Kruskal Wallis Test	
	MEAN	S D	MEAN	S D	MEAN	SD	χ^2	p value
Physical domain	51.02	12.05	53.10	12.35	58.50	9.82	5.426	0.066
Psychological domain	58.83	13.30	58.10	14.82	64.75	12.38	3.679	0.159
Social relationship domain	64.04	12.15	63.17	11.51	68.21	14.22	4.289	0.117
Environmental domain	70.72	6.51	68.07	6.81	73.29	6.39	6.561	**0.038**

Table shows significant association ($p<0.05$) between environmental domain of QOL and type of hypertensive disorder of pregnancy.

FIGURE 13: ASSOCIATION OF QOL OF CASES WITH TYPE OF HYPERTENSIVE DISORDER OF PREGNANCY

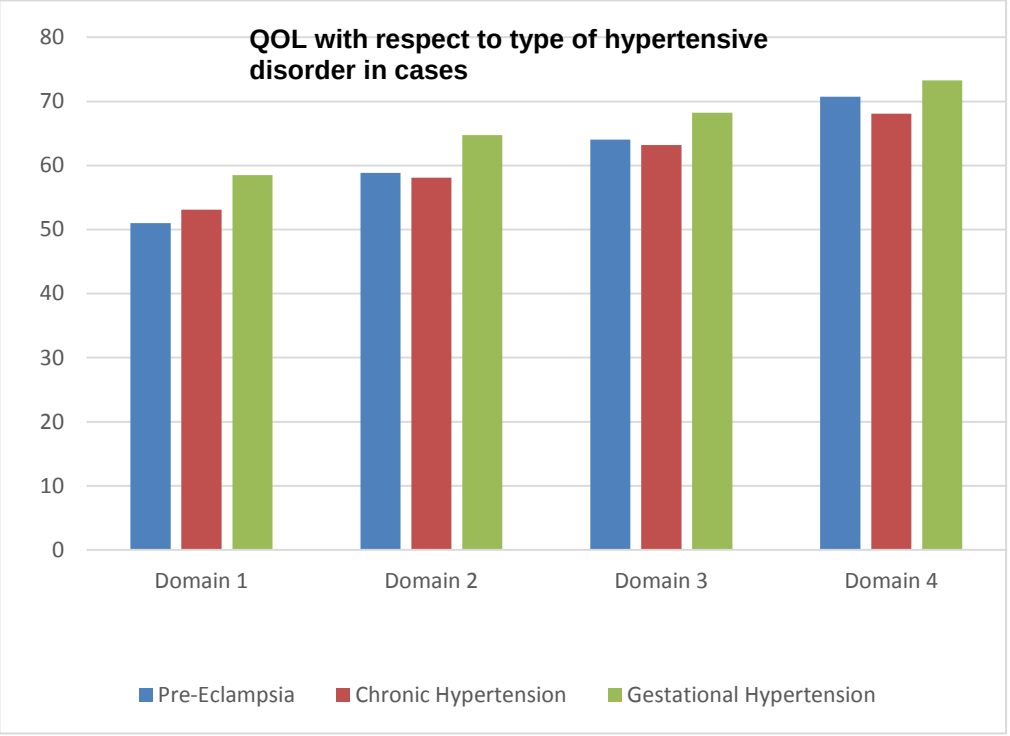

Figure shows QOL scores of cases in various domains with respect to type of hypertensive disorder of pregnancy. The scores were comparable in 3 groups.

TABLE 15: ASSOCIATION OF QOL OF CASES WITH PRESENCE OF PSYCHIATRIC COMORBIDITY

WHO QOL BREF	PSYCHIATRIC COMORBIDITY				Wilcoxon-Mann-Whitney U Test	
	YES		NO			
	MEAN	SD	MEAN	SD	W	*p* value
Physical domain	50.58	11.85	58.47	10.39	716.00	**0.001**
Psychological domain	56.12	13.67	67.00	10.71	599.500	**<0.001**
Social relationship domain	62.95	13.20	68.06	10.64	919.500	0.085
Environmental domain	70.17	7.13	71.28	6.13	998.500	0.246

Table shows significant association of QOL on physical and psychological domains in cases with respect to presence of psychiatric comorbidity. Mean QOL was significantly lower on physical and psychological domains in hypertensive pregnant patients who had psychiatric comorbidity.

FIGURE 14: ASSOCIATION OF QOL OF CASES WITH PRESENCE OF PSYCHIATRIC COMORBIDITY

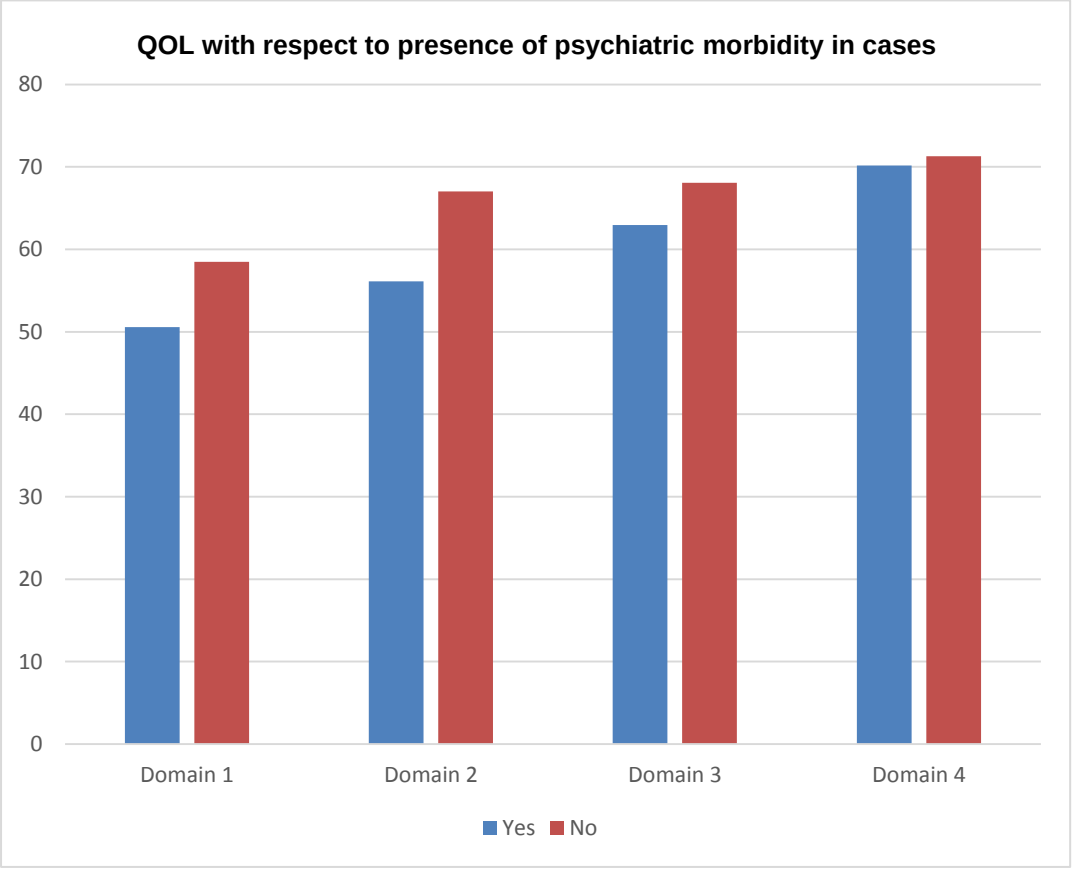

Figure shows mean QOL in all domains was lower in cases who had psychiatric comorbidity .

TABLE 16: ASSOCIATION OF PSYCHIATRIC COMORBIDITY BETWEEN CASES AND CONTROLS

Psychiatric Comorbidity	Group			Chi-Squared Test	
	Case	Control	Combined	χ2	*p* Value
Yes	64 (64.0%)	38 (38.0%)	102 (51.0%)		
No	36 (36.0%)	62 (62.0%)	98 (49.0%)		
Total	100 (100.0%)	100 (100.0%)	200 (100.0%)	13.525	**<0.001**

Table shows there was significant difference between the prevalence of psychiatric comorbidity between cases and controls.

FIGURE 15: DISTRIBUTION OF PSYCHIATRIC COMORBIDITY BETWEEN CASES AND CONTROLS

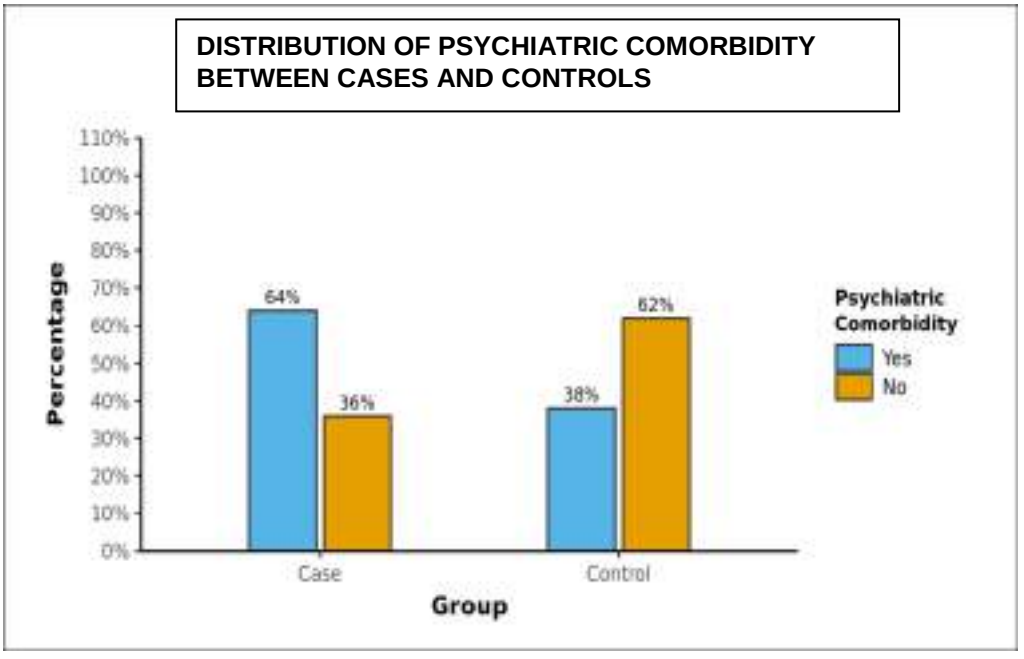

Figure shows 64% cases and 38% controls had psychiatric comorbidity.

TABLE 17: ASSOCIATION OF MAJOR DEPRESSIVE DISORDER/ RECURRENT DEPRESSIVE DISORDER BETWEEN CASES AND CONTROLS

Major Depressive Disorder/ Recurrent Depressive Disorder	Group			Chi-Squared Test	
	Case	Control	Combined	χ2	*p* Value
Yes	34 (34.0%)	14 (14.0%)	48 (24.0%)	10.965	**<0.001**
No	66 (66.0%)	86 (86.0%)	152 (76.0%)		
Total	100 (100.0%)	100 (100.0%)	200 (100.0%)		

Table shows there was a significant difference between cases and controls in terms of distribution of Major Depressive Disorder/Recurrent Depressive Disorder.

FIGURE 16: DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO MAJOR DEPRESSIVE DISORDER/RECURRENT DEPRESSIVE DISORDER

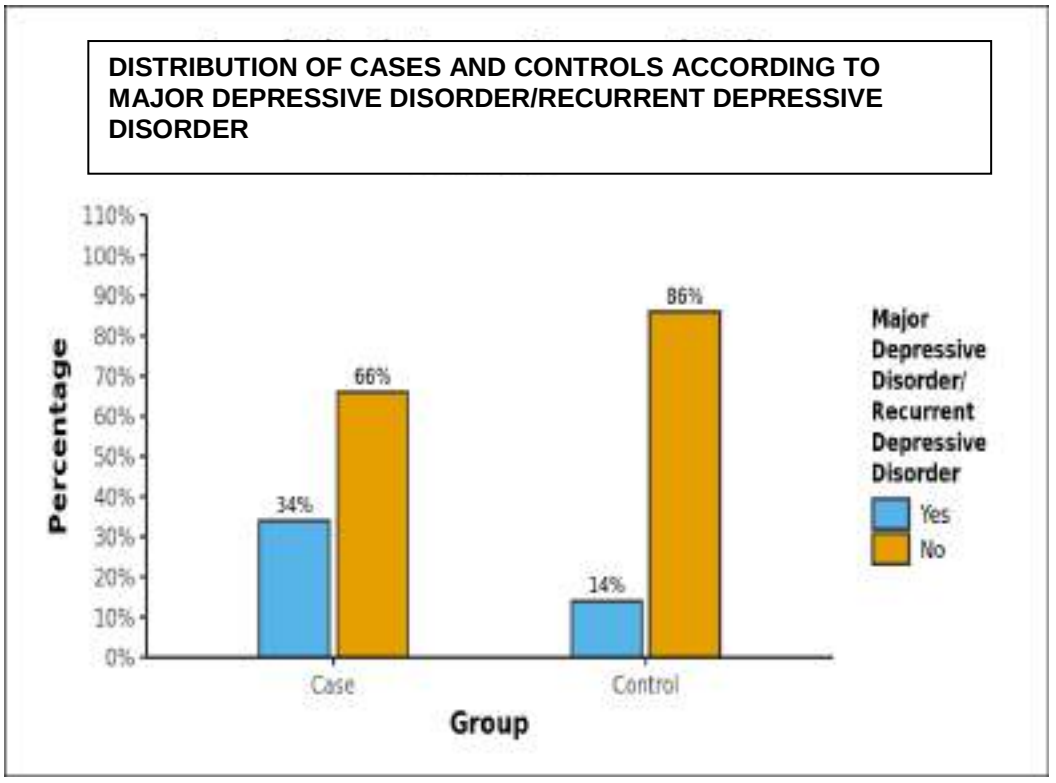

Figure shows 34% cases and 14% controls had major depressive disorder/recurrent depressive disorder.

TABLE 18: ASSOCIATION OF GENERALISED ANXIETY DISORDER BETWEEN CASES AND CONTROLS

Generalised Anxiety Disorder	Group			Chi-Squared Test	
	Case	Control	Combined	χ2	*p* Value
Yes	24 (24.0%)	9 (9.0%)	33 (16.5%)	8.165	**0.004**
No	76 (76.0%)	91 (91.0%)	167 (83.5%)		
Total	100 (100.0%)	100 (100.0%)	200 (100.0%)		

Table shows there was a significant difference between cases and controls in terms of distribution of Generalised Anxiety Disorder.

FIGURE 17: DISTRIBUTION OF CASES AND CONTROLS ACCORDING TO GENERALISED ANXIETY DISORDER

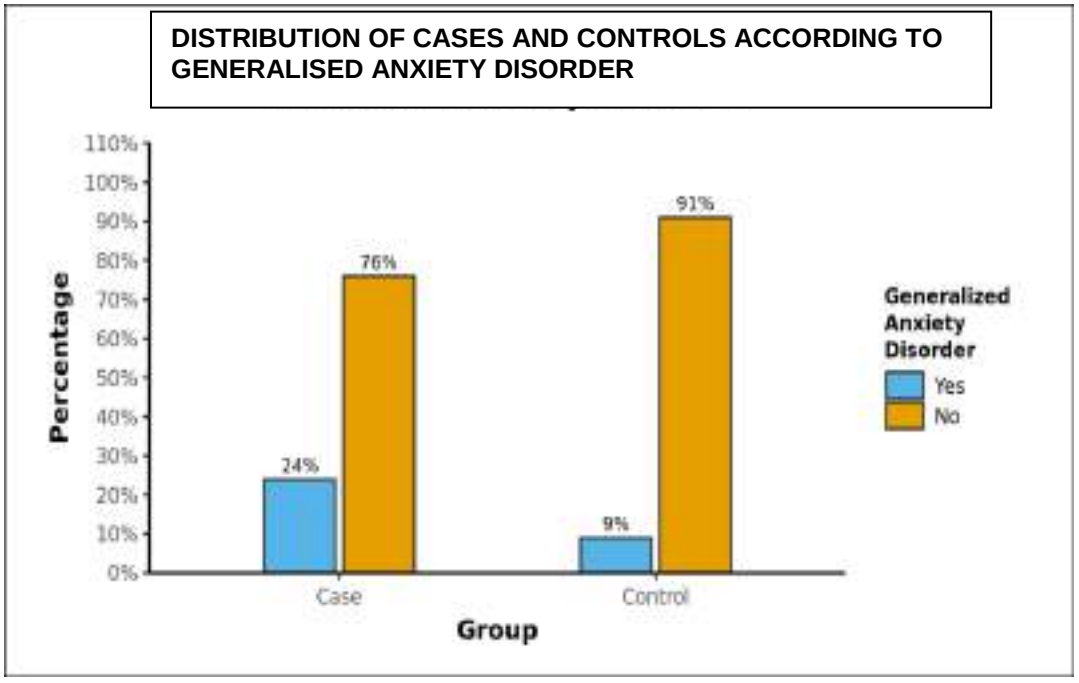

Figure shows 24% cases and 9% controls had generalised anxiety disorder

TABLE 19: COMPARISON OF WHO QOL BREF SCORES (TRANSFORMED SCORES) IN CASES AND CONTROLS

	CASES (N=100)		CONTROLS (N=100)		**Wilcoxon-Mann-Whitney U Test**	
	MEAN	SD	MEAN	SD	W	*p* value
Physical domain	53.42	11.92	59.59	12.70	3586.000	**<0.001**
Psychological domain)	60.04	13.68	63.94	12.60	4205.000	**0.048**
Social relationship domain	64.79	12.52	68.58	11.11	4242.500	0.053
Environmental domain	70.57	6.78	69.73	7.04	5422.000	0.276

Table shows significant relationship of QOL on physical and psychological domains of QOL in hypertensive and non hypertensive pregnant females.

FIGURE 18: COMPARISON OF WHO QOL BREF SCORES (TRANSFORMED SCORES) IN CASES AND CONTROLS

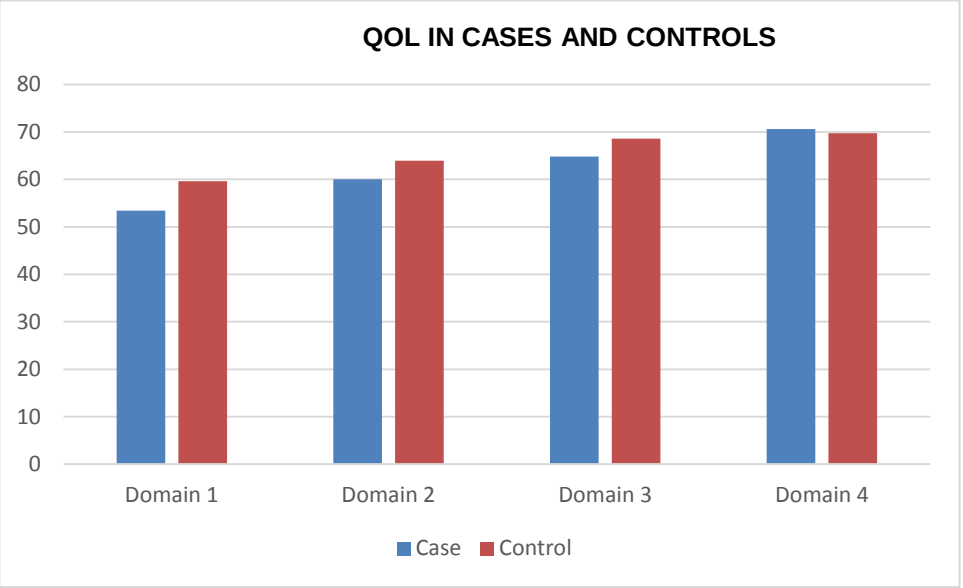

Figure shows QOL was better in controls than cases in all domains except environmental domain in which it is comparable in both groups.

TABLE 20: DISTRIBUTION OF CONTROLS WITH RESPECT TO PSYCHIATRIC COMORBIDITY ON M.I.N.I.

Psychiatric Morbidity	n(%)
Psychiatric Comorbidity	38 (38.0%)
Major Depressive Disorder/Recurrent Depressive Disorder	14 (14.0%)
Dysthymia	0 (0.0%)
Suicidality	1 (1.0%)
Manic/Hypomanic Episode	1 (1.0%)
Panic Attack/Disorder	2 (2.0%)
Agoraphobia	1 (1.0%)
Social Phobia/Social Anxiety Disorder	2 (2.0%)
Obsessive Compulsive Disorder	5 (5.0%)
Posttraumatic Stress Disorder	0 (0.0%)
Alcohol Abuse/Dependence	0 (0.0%)
Substance Abuse/Dependence (Non Alcohol)	0 (0.0%)
Psychotic Disorders/Mood Disorder With Psychotic Features	2 (2.0%)
Anorexia Nervosa	1 (1.0%)
Bulimia Nervosa	0 (0.0%)
Generalised Anxiety Disorder	9 (9.0%)
Antisocial Personality Disorder	1 (1.0%)

Table shows majority of controls had Major Depressive Disorder/Recurrent Depressive Disorder (14%) followed by Generalised Anxiety Disorder (9%)

TABLE 21: ASSOCIATION BETWEEN PSYCHIATRIC COMORBIDITY AND MAJOR DEPRESSIVE DISORDER/ RECURRENT DEPRESSIVE DISORDER IN CONTROLS

Major Depressive Disorder/ Recurrent Depressive Disorder	Psychiatric Comorbidity			Chi-Squared Test	
	Yes	No	Total	$\chi 2$	*p* Value
Yes	14 (36.8%)	0 (0.0%)	14 (14.0%)	26.561	<0.001
No	24 (63.2%)	62 (100.0%)	86 (86.0%)		
Total	38 (100.0%)	62 (100.0%)	100 (100.0%)		

Among controls, out of the patients who had psychiatric comorbidity, significant number of them had Major Depressive/ Recurrent Depressive Disorder.

TABLE 22: ASSOCIATION BETWEEN PSYCHIATRIC COMORBIDITY AND GENERALISED ANXIETY DISORDER IN CONTROLS

Generalised Anxiety Disorder	Psychiatric Comorbidity			Fisher's Exact Test	
	Yes	No	Total	χ2	*p* Value
Yes	9 (23.7%)	0 (0.0%)	9 (9.0%)	16.136	<0.001
No	29 (76.3%)	62 (100.0%)	91 (91.0%)		
Total	38 (100.0%)	62 (100.0%)	100 (100.0%)		

Among controls, out of the patients who had psychiatric comorbidity, significant number of them had Generalised Anxiety Disorder.

TABLE 23: ASSOCIATION BETWEEN PSYCHIATRIC COMORBIDITY AND OBSESSIVE COMPULSIVE DISORDER IN CONTROLS

Obsessive Compulsive Disorder	Psychiatric Comorbidity			Fisher's Exact Test	
	Yes	No	Combined	χ2	*p* Value
Yes	5 (13.2%)	0 (0.0%)	5 (5.0%)	8.587	**0.007**
No	33 (86.8%)	62 (100.0%)	95 (95.0%)		
Total	38 (100.0%)	62 (100.0%)	100 (100.0%)		

Table shows among controls, out of the patients who had psychiatric comorbidity, significant number of them had Obsessive Compulsive Disorder

TABLE 24: COMPARISON OF WHO QOL BREF SCORES (TRANSFORMED SCORES) WITH RESPECT TO PRESENCE OF PSYCHIATRIC COMORBIDITY IN CONTROLS

WHO QOL BREF	PSYCHIATRIC COMORBIDITY				Wilcoxon-Mann-Whitney U Test	
	YES		NO			
	MEAN	SD	MEAN	SD	W	*p* value
Physical domain	51.79	13.24	64.37	9.71	539.500	**<0.001**
Psychological domain	53.26	11.62	70.48	7.83	270.000	**<0.001**
Social relationship domain	62.21	13.39	72.48	7.14	630.000	**<0.001**
Environmental domain	67.97	5.86	70.81	7.51	870.500	**0.020**

Table shows significant relationship of QOL on all domains in non hypertensive term pregnant females with presence of psychiatric comorbidity. Mean QOL was lower in controls with psychiatric comorbidity than those without psychiatric comorbidity.

FIGURE 19: COMPARISON OF WHO QOL BREF SCORES (TRANSFORMED SCORES) WITH RESPECT TO PRESENCE OF PSYCHIATRIC COMORBIDITY IN CONTROLS

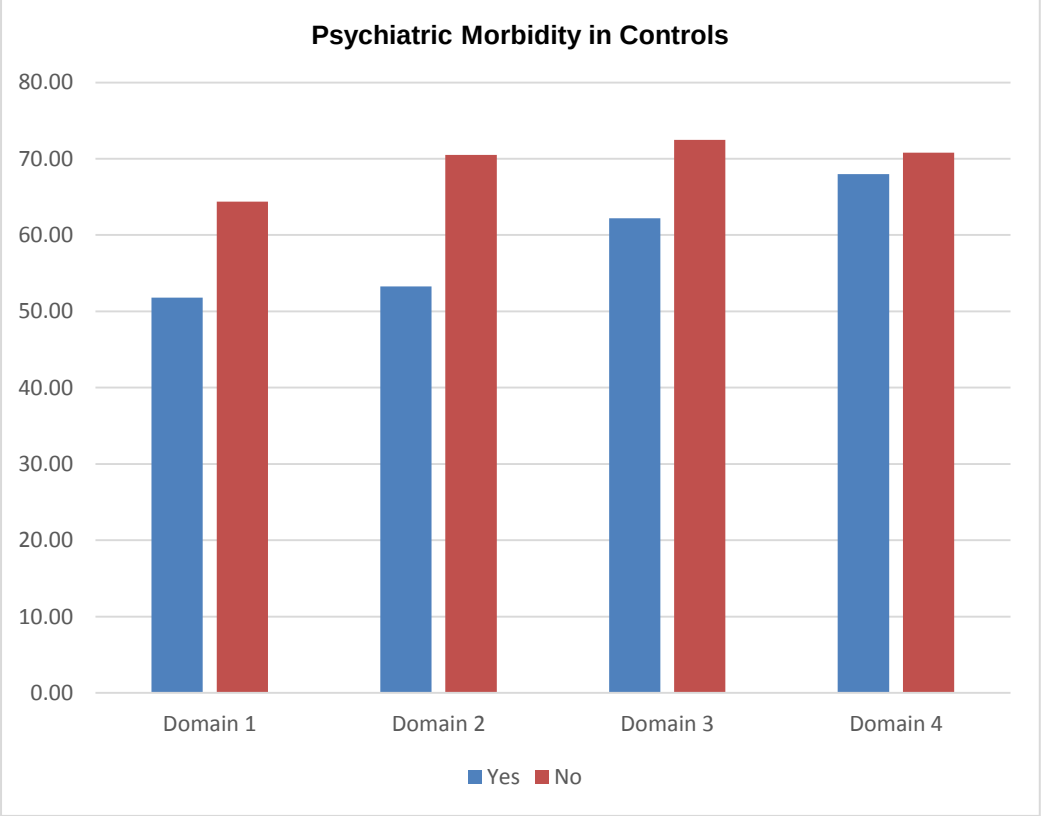

Figure shows Mean QOL in all domains was lower in controls with psychiatric comorbidity than those without psychiatric comorbidity.

TABLE 25: ASSOCIATION OF QOL OF CONTROLS WITH MAJOR DEPRESSIVE DISORDER/ RECURRENT DEPRESSIVE DISORDER

WHO-QoL-Bref: Domain 1 Transformed Score (0-100)	**Major Depressive Disorder/Recurrent Depressive Disorder**		**Wilcoxon-Mann-Whitney U Test**	
	Yes	**No**	**W**	***p* value**
Mean (SD)	47.36 (12.01)	61.58 (11.71)	241.500	**<0.001**
Median (IQR)	47 (39.5-56)	63 (56-69)		
Range	31 - 69	31 – 81		
WHO-QoL-Bref: Domain 2 Transformed Score (0-100)	**Major Depressive Disorder/Recurrent Depressive Disorder**		**Wilcoxon-Mann-Whitney U Test**	
	Yes	**No**	**W**	***p* value**
Mean (SD)	50.93 (10.36)	66.06 (11.67)	210.500	**<0.001**
Median (IQR)	50 (44-56)	69 (63-75)		
Range	31 - 69	31 – 81		
WHO-QoL-Bref: Domain 3 Transformed Score (0-100)	**Major Depressive Disorder/Recurrent Depressive Disorder**		**Wilcoxon-Mann-Whitney U Test**	
	Yes	**No**	**W**	***p* value**
Mean (SD)	59.93 (12.66)	69.99 (10.25)	296.000	**0.001**
Median (IQR)	62.5 (50-69)	75 (69-75)		
Range	44 - 75	25 – 94		
WHO-QoL-Bref: Domain 4 Transformed Score (0-100)	**Major Depressive Disorder/Recurrent Depressive Disorder**		**Wilcoxon-Mann-Whitney U Test**	
	Yes	**No**	**W**	***p* value**
Mean (SD)	67.14 (5.78)	70.15 (7.16)	435.000	0.078
Median (IQR)	69 (64.5-69)	69 (69-75)		
Range	56 - 75	50 – 94		

There was a significant difference between the QOL and Major Depressive Disorder/Recurrent Depressive Disorder in controls. Mean QOL was low in all domains in controls with Major Depressive Disorder/Recurrent Depressive Disorder

FIGURE 20: ASSOCIATION OF QOL OF CONTROLS WITH MAJOR DEPRESSIVE DISORDER/ RECURRENT DEPRESSIVE DISORDER

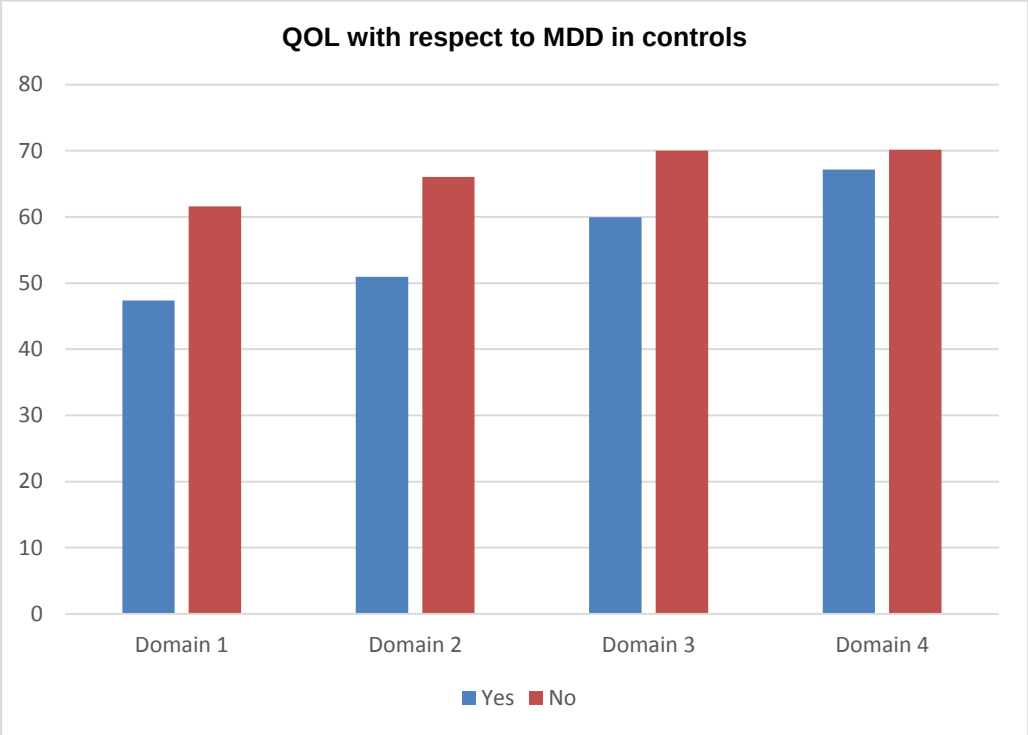

Figure shows QOL of controls was low in all domains with Major Depressive Disorder/Recurrent Depressive Disorder.

TABLE 26: ASSOCIATION OF QOL OF CONTROLS WITH GENERALISED ANXIETY DISORDER

WHO-QOL-Bref Domain 1 Transformed Score (0-100)	**Generalised Anxiety Disorder**		**Wilcoxon-Mann-Whitney U Test**	
	Yes	**No**	**W**	***p* value**
Mean (SD)	53.00 (9.99)	60.24 (12.80)	261.000	0.071
Median (IQR)	50 (44-63)	63 (56-69)		
Range	44 – 69	31 – 81		
WHO-QOL-Bref Domain 2 Transformed Score (0-100)	**Generalised Anxiety Disorder**		**Wilcoxon-Mann-Whitney U Test**	
	Yes	**No**	**W**	***p* value**
Mean (SD)	50.22 (8.32)	65.30 (12.16)	127.000	**0.001**
Median (IQR)	44 (44-56)	69 (59.5-75)		
Range	44 – 63	31 – 81		
WHO-QOL-Bref Domain 3 Transformed Score (0-100)	**Generalised Anxiety Disorder**		**Wilcoxon-Mann-Whitney U Test**	
	Yes	**No**	**W**	***p* value**
Mean (SD)	61.78 (10.20)	69.25 (11.02)	235.500	**0.025**
Median (IQR)	56 (56-69)	75 (69-75)		
Range	50 – 75	25 – 94		
WHO-QOL-Bref Domain 4 Transformed Score (0-100)	**Generalised Anxiety Disorder**		**Wilcoxon-Mann-Whitney U Test**	
	Yes	**No**	**W**	***p* value**
Mean (SD)	69.67 (4.69)	69.74 (7.24)	393.000	0.837
Median (IQR)	69 (69-75)	69 (69-75)		
Range	63 – 75	50 – 94		

There was a significant difference between the psychological and social relationship domains of QOL and Generalised Anxiety Disorder in controls. Mean QOL was low in all domains in controls with Generalised Anxiety Disorder

FIGURE 21: ASSOCIATION OF QOL OF CONTROLS WITH GENERALISED ANXIETY DISORDER

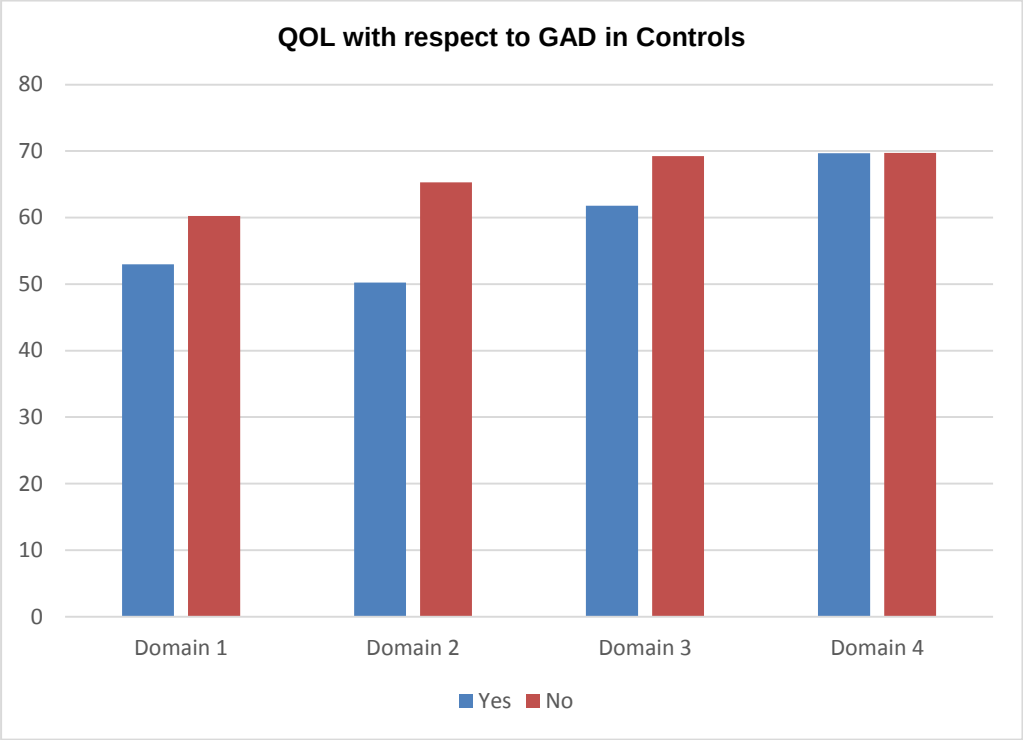

Figure shows QOL of controls was low in all domains with Generalised Anxiety Disorder.

RESULTS

The study was conducted on 100 pregnant females in age group of 20-40 years with spontaneous conception presenting with hypertensive disorders of pregnancy (cases) and 100 antenatal women with spontaneous conception at term (37-41 weeks of pregnancy) with no associated comorbidity and no obvious stressor (controls) presenting to Outpatient and Inpatient Department of Obstetrics and Gynaecology at Dayanand Medical College and Hospital, Ludhiana over a period of one year from 1st May, 2020 to 1st May, 2021.The data thus collected was tabulated and after analysing, following results were obtained.

Table 1 and figure 1 shows age wise distribution of cases and controls. Among cases, 39% were in age group of 25-30 years (majority) followed by 33% in age group of 30-35 years, 18% in age group of 35-40 years and only 10% in age group of 20-25 years. Among controls, 48% were in age group of 25-30 years (majority) followed by 24% in age group of 30-35 years, 17% in age group of 20-25 years and only 11% in age group of 35-40 years.

Table 2 shows the mean (SD), median (IQR) of Period of Gestation (Weeks) in the Case group- which was 30.18 weeks (5.67), 30.1 weeks (27-35.02) respectively. The mean (SD), median (IQR) of Period of Gestation (Weeks) in the Control group was 38.11 (0.82), 38.2 (37.3-38.7) respectively. The period of gestation (weeks) in the Case group ranged from 13.1 - 39.3 while that in the Control group ranged from 37 - 41.

Figure 2 shows the mean period of gestation in Case group was 30.2 weeks and that in Control group was 38.1weeks.

Table 3 and Figure 3 shows education wise distribution of cases and controls.

Among cases, only 16% were illiterate and rest 84% were literate- 15% had studied till primary and middle school, 16% had done

matriculation, 31% had studied upto higher secondary/diploma and 22% had done Graduation/Post Graduation. Among controls, 25% of them were illiterate and rest 75% were literate-19% had studied till primary and middle school, 6% had done matriculation,23% had studied upto higher secondary/diploma and 27% had done Graduation/Post Graduation.

Table 4 and Figure 4 shows occupation wise distribution of cases and controls. Majority of patients among cases and controls were homemakers- 74% and 68% respectively. 18% of cases and 22% of controls had professional jobs and rest 8% cases and 10% controls were semi-skilled and skilled workers.

Figure 5 shows locality wise distribution of cases and controls. Majority of both the cases and controls belonged to urban locality i.e. 64% and 72% respectively. Rest 36% cases and 28% controls belonged to rural locality.

Figure 6 shows distribution of cases and controls according to family type. Among cases, 49% belonged to extended family while the rest 25% and 26% belonged to nuclear and joint family respectively. Among controls, 40% belonged to extended family while the rest 32% and 28% belonged to nuclear and joint family respectively.

Table 5 and Figure 7 shows distribution of cases in terms of systolic BP. 80% of them had systolic BP 140-159 mmHg while the remaining 20% had systolic BP ≥ 160 mmHg.

Table 6 and Figure 8 shows distribution of hypertensive pregnant females in terms of diastolic BP. 80% of them had diastolic BP 90-109 mmHg while the remaining 20% had diastolic BP ≥ 110 mmHg.

Table 7 and Figure 9 shows distribution of cases in terms of gestational age at detection of hypertension (weeks).Majorityof the cases(36%) had gestational age at detection of hypertension (Weeks):20-24 weeks followed by 29% having it as < 20 weeks, 29%

having 25-28 weeks, 5% had 29-32 weeks and only 1% of cases had gestational age of 33-36 weeks at detection of hypertension.

Table 8 and Figure 10 shows distribution of cases according to type of hypertensive disorder of pregnancy. 47% of the cases had Pre-Eclampsia (majority) followed by Chronic Hypertension in 29% cases and Gestational Hypertension in 24% cases.

Figure 11 shows distribution of cases according to presence of psychiatric comorbidity.64% of the cases reported presence of psychiatric comorbidity while 36% of the cases did not have psychiatric comorbidity.

Table 9 shows distribution of cases with respect to psychiatric comorbidity on M.I.N.I. Out of 64 cases who reported psychiatric comorbidity on MINI, MDD/RDD was most frequent (34%) followed by GAD (24%), social phobia/ social anxiety disorder (5%), OCD (5%), Agoraphobia (2%), Psychotic disorders/ mood disorder with psychotic features(2%), manic/hypomanic episode (1%) and panic attack/disorder (1%).

Table 10 shows association of psychiatric comorbidity in cases with type of hypertensive disorder of pregnancy. No significant difference was seen between psychiatric comorbidity and type of hypertensive disorder of pregnancy ($p>0.05$).

Table 11 shows association between psychiatric comorbidity and Major Depressive Disorder/Recurrent Depressive Disorder (MDD/RDD) in cases. Out of 64 patients, who had psychiatric comorbidity among cases, 53.1% had MDD/RDD. The chi-square value was 28.977 and p value was <0.001 which was significant. It showed that there was significant association between psychiatric comorbidity and MDD/RDD in cases.

Table 12 shows association between psychiatric comorbidity and Generalised Anxiety Disorder (GAD) in cases. Out of 64 patients, who

had psychiatric comorbidity among cases, 37.5% had GAD. The chi-square value was 17.763 and p value was <0.001. It showed that there was significant association between psychiatric comorbidity and GAD in cases.

Table 13 and Figure 12 shows mean WHO QOL BREF Scores on 4 domains of cases. The transformed scores (0-100) were analysed. The variable WHO QOL BREF and various domains (Physical, Psychological, Social and environmental Domain) Transformed Scores (0-100) was not normally distributed. Thus, non parametric test-Shapiro-Wilk Test was used to make group comparisons. Domain 1 i.e., physical mean score was 53.42 (SD 11.92), Domain 2 i.e., psychological mean score was 60.04 (SD 13.68), domain 3 i.e., social relationship mean score was 64.79 (SD 12.52) and domain 4 i.e environmental mean score was 70.57 (6.78).

Table 14 and Figure 13 shows association of QOL of cases with respect to type of hypertensive disorder of pregnancy. The transformed scores (0-100) were analysed. The variable WHO QOL-BREF: Transformed Score (0-100) in all domains was not normally distributed in the 3 subgroups of the variable Hypertensive Disorder of Pregnancy. Thus, non-parametric test (Kruskal Wallis Test) was used to make group comparisons. The mean scores on physical domain in cases with pre-eclampsia, chronic hypertension and gestational hypertension were 51.02 (SD 12.05), 53.10 (SD 12.35) and 58.50 (SD 9.82). The chi- square value was 5.426 and p value was 0.066. The mean scores on psychological domain in cases with pre-eclampsia, chronic hypertension and gestational hypertension were 58.83 (SD 13.30), 58.10 (SD 14.82) and 64.75 (SD 12.38). The chi- square value was 3.679 and p value was 0.159. The mean scores on social relationship domain in cases with pre-eclampsia, chronic hypertension and gestational hypertension were 64.04 (SD 12.15), 63.17 (SD 11.51) and 68.21 (SD 14.22). The chi- square value was 4.289 and p value was 0.117. The mean scores on environmental domain in cases with pre-

eclampsia, chronic hypertension and gestational hypertension were 70.72 (SD 6.51), 68.07 (SD 6.81) and 73.29 (SD 6.39). The chi- square value was 6.561 and p value was 0.038.It showed that there was no significant association of QOL of cases in various domains with respect to type of hypertensive disorder of pregnancy except in environmental domain in which significant association was seen.

Table 15 and Figure 14 shows association of QOL of cases with respect to presence of psychiatric comorbidity. The variable WHO-QOL-BREF: Transformed Score (0-100) in all domains was not normally distributed in the 2 subgroups of the variable Psychiatric Comorbidity. Thus, non-parametric tests (Wilcoxon-Mann-Whitney U Test) were used to make group comparisons. The mean QOL scores in physical, psychological, social relationship and environmental domains in the Psychiatric Comorbidity: Yes group were 50.58 (SD 11.85), 56.12(SD 13.67), 62.95 (SD 13.20) and 70.17 (SD 7.13) while that in Psychiatric Comorbidity: No group were 58.47 (SD 10.39), 67.00 (SD 10.71), 68.06 (SD 10.64) and 71.28 (SD 6.13).There was significant difference between the 2 groups in terms of physical domain (W= 716.000, p = 0.001) and psychological domain (W= 599.500, p = <0.001). There was no significant difference between the groups in terms of social relationship domain (W = 919.500, p = 0.085) and environmental domain (W = 998.500, p = 0.246).

Table 16 shows association of psychiatric comorbidity between cases and controls. 64% cases and 38% controls had psychiatric comorbidity. Chi-square value was 13.525 and p value was <0.001. There was significant difference between prevalence of psychiatric comorbidity between cases and controls.

Figure 15 shows distribution of psychiatric comorbidity between cases and controls. 64% cases and 38% controls had psychiatric comorbidity.

Table 17 shows association of Major Depressive Disorder/Recurrent

Depressive Disorder between cases and controls. 34% of the cases and 14% of the controls had MDD/RDD. There was a significant difference between the cases and controls in terms of distribution of Psychiatric Comorbidity ($\chi 2 =$ 10.965, p =<0.001).

Figure 16 shows distribution of cases and controls according to MDD/RDD. The prevalence of MDD/RDD was found to be 34% among cases and 14% among controls.

Table 18 shows association of Generalised Anxiety Disorder between cases and controls. 24% of the cases and 9% of the controls had GAD. Chi-square value was 8.165 and p value was 0.004. The study showed significant association of GAD between cases and controls.

Figure 17 shows distribution of cases and controls according to Generalised Anxiety Disorder. The prevalence of GAD was found to be 24% among cases and 9% among controls.

Table 19 and Figure 18 shows comparison of WHO QOL BREF scores (Transformed 0-100) in cases and controls. The variable WHO-QOL-BREF: Transformed Score (0-100) in all domains was not normally distributed in cases and controls. Thus, non parametric test (Wilcoxon-Mann-Whitney U Test) was used to make group comparisons. The mean scores in physical, psychological, social relationship and environmental domains among cases were 53.42 (SD 11.92), 60.04 (SD 13.68), 64.79 (SD 12.52) and 70.57 (SD 6.78).The mean scores in physical, psychological, social relationship and environmental domains among controls were 59.59(12.70), 63.94 (SD 12.60), 68.58 (SD 11.11) and 69.73(SD 7.04). There was a significant difference between the cases and controls in terms of physical domain (W = 3586.000,p=<0.001) and psychological domain(W = 4205.000, p = 0.048). No significant difference was seen between the cases and controls in terms of social relationship domain (W=4242.500, p=0.053) and environmental domain(W = 5422.000, p = 0.276) was seen.

Table 20 shows distribution of controls with respect to psychiatric

comorbidity on M.I.N.I. In our study, the majority of patients in control group had MDD/RDD i.e. 14% followed by GAD- 9%, OCD- 5%, Social phobia/social anxiety disorder- 2%, Panic attack/disorder- 2%, Psychotic disorders/ mood disorder with psychotic features- 2%, Dysthymia- 1%, Manic/hypomanic episode- 1%, suicidality- 1%, agoraphobia- 1%, Anorexia nervosa- 1% and Antisocial Personality Disorder- 1%.

Table 21 shows association between psychiatric comorbidity and Major Depressive Disorder/Recurrent Depressive Disorder in controls. Among controls, out of 38 patients who had psychiatric comorbidity, 36.8% had MDD/RDD. Chi-squared test was used to explore the association between 'Psychiatric Comorbidity' and 'Major Depressive Disorder/Recurrent Depressive Disorder'. Controls with psychiatric co-morbidity had significantly more prevalence of MDD/RDD than those without psychiatric co-morbidity ($\chi 2 = 26.561$, $p = <0.001$).

Table 22 shows association between psychiatric comorbidity and Generalised Anxiety Disorder in controls. Among controls, out of 38 patients who had psychiatric comorbidity, 23.7% had GAD. Fisher's exact test was used to explore the association between 'Psychiatric Comorbidity' and 'Generalised Anxiety Disorder' as more than 20% of the total number of cells had an expected count of less than 5.There was a significant difference between the controls with psychiatric comorbidity and controls without psychiatric comorbidity in terms of distribution of Generalised Anxiety Disorder ($\chi 2 = 16.136$, $p = <0.001$).

Table 23 shows association between psychiatric comorbidity and Obsessive Compulsive Disorder in controls. Among controls, out of 38 patients who had psychiatric comorbidity, 13.2 % had OCD. Fisher's exact test was used to explore the association between 'Psychiatric Comorbidity' and 'Obsessive Compulsive Disorder' as more than 20% of the total number of cells had an expected count of less than 5.There was a significant difference between the controls with psychiatric comorbidity and controls without psychiatric comorbidity in terms of

distribution of Obsessive Compulsive Disorder ($\chi 2 = 8.587$, $p = 0.007$).

Table 24 and Figure 19 shows association of QOL of controls with respect to presence of psychiatric comorbidity. The variable WHO-QOL-BREF: Transformed Score (0-100) in all domains was not normally distributed in the 2 subgroups of the variable Psychiatric Comorbidity. Thus, non-parametric tests (Wilcoxon-Mann-Whitney U Test) were used to make group comparisons. The mean QOL scores in physical, psychological, social relationship and environmental domains in the Psychiatric Comorbidity: Yes group were 51.79 (SD 13.24), 53.26 (SD 11.62), 62.21 (SD 13.39), 67.97 (SD 5.86) while that in Psychiatric Comorbidity: No group were 64.37 (SD 9.71), 70.48 (SD 7.83), 72.48 (SD 7.14) and 70.81 (SD 7.51).There was significant difference between the 2 groups in terms of physical domain (W =539.500, p =< 0.001), psychological domain (W =270.000, p = <0.001), social relationship domain (W = 630.000, p = <0.001) and environmental domain (W =870.500, p = 0.020).

Table 25 and Figure 20 shows association of QOL of controls with Major Depressive Disorder/ Recurrent Depressive Disorder.

The variable WHO-QOL-BREF: Transformed Score (0-100) in all domains was not normally distributed in the 2 subgroups of the variable Major Depressive Disorder/Recurrent Depressive Disorder. Thus, non-parametric tests (Wilcoxon- Mann-Whitney U Test) were used to make group comparisons. The mean QOL scores in physical, psychological, social relationship and environmental domains in the MDD/RDD: Yes group were 47.36 (SD 12.01), 50.93(SD 10.36), 59.93 (SD 12.66) and 67.14(SD 5.78) while in No group were 61.58 (SD 11.71), 66.06 (SD 11.67), 69.99 (SD 10.25) and 70.15 (SD 7.16). There was a significant association of QOL of controls with MDD/RDD in all domains i.e., physical domain (W =241.500, p =< 0.001), psychological domain (W =210.500, p = 0.001), social relationship domain (W = 296.000, p = 0.001) except for environmental domain (W =435.000, p = 0.078).

Table 26 and Figure 21 shows association of QOL of controls with Generalised Anxiety Disorder. The variable WHO-QoL-Bref: Transformed Score (0-100) in all domains was not normally distributed in the 2 subgroups of the variable Generalised Anxiety Disorder. Thus, non-parametric tests (Wilcoxon-Mann-Whitney U Test) were used to make group comparisons. The mean QOL scores in physical, psychological, social relationship and environmental domains in the GAD: Yes group were 53.00(SD 9.99), 50.22(SD 8.32), 61.78(SD 10.20) and 69.67(SD 4.69) while in No group were 60.24(SD 12.80), 65.30(SD 2.16), 69.25(SD 11.02) and 69.74 (SD 7.24). There was a significant association of QOL of controls with GAD in psychological domain (W=127.000, p= 0.001) and social relationship domain (W= 235.500, p= 0.025). No significant association of QOL of controls with GAD was seen in physical domain (W= 261.000, p=0.071) and environmental domain (W= 393.000, p= 0.837).

DISCUSSION

Although pregnancy is considered a period of hopes and growth but some women experience varying levels of anxiety and stress during this period. Women with complicated pregnancies, such as those with hypertensive disorders during pregnancy might be at greater risk. These disorders not only affect the physical health of pregnant females but also affect their mental health and in turn impede their QOL. Psychiatric disorders generally occur in some of the normotensive term pregnant females as well as in those with hypertensive disorders of pregnancy but they often remain undiagnosed.

The current study was done to assess the QOL and prevalence of psychiatric co-morbidities in females with hypertensive disorders of pregnancy and compare it with normotensive term pregnant females. The study consisted of 100 hypertensive pregnant females (cases) and 100 normotensive term pregnant females (controls) and was done over a period of one year from 1st May 2020 to 1st May, 2021.The cases and controls were evaluated for Psychiatric comorbidities and QOL by using M.I.N.I and WHO QOL- BREF scales

In our study, majority of the cases were in 25-30 years age group (39%), 33% belonged to 30-35 years age group and only 10% cases were in age group of 20-25 years. The mean age of cases was 30.12 ± 4.25 years. Comparatively, among controls, 17% were in age group of 20-25 years, 72% belonged to 25-35 years age group and only 11% belonged to 35-40 years age group. The mean age of controls was lesser as compared to cases which was 28.68±4.25 years. This variation could be explained by the fact that mostly high risk pregnancies occur after the age of 30 years.

The results with respect to age group were concordant with the study done by **Owiredu et al**[55] where the women aged 24 years or less did not have a significantly increased risk of developing Pregnancy Induced Hypertension compared to women between 25–29 years of

age. In accordance with our study, **Parazzini et al**[56] noted that the risk of developing Pregnancy Induced Hypertension tends to increase with maternal age.

In the present study, among cases, only 16% were illiterate and the rest 84% were literate while among controls, comparatively fewer number i.e. 75% were literate and the remaining 25% were illiterate. **Sachdeva et al**(57) findings were congruent with our findings of higher incidence of Pregnancy Induced Hypertension among literates. This could be due to the fact that literate females especially in Indian scenario married later in their life.

As per our study, among cases, majority were homemakers (74%) while the rest (26%) were working. Comparatively in the present study, among controls, lesser number of females (68%) were homemakers and the rest 32% were working. Similar results with respect to occupation were seen in study by **Tebeu et al**[58], who noted greater risk of hypertension in pregnancy amongst housewives. In a study done by **Mohd Saat et al[59],** it was seen that housewives are more likely to be overweight or obese and have reduced physical exercise, which puts them at risk of cardiovascular disease.

In our study, 64% of the cases belonged to urban locality and 36% belonged to rural locality. On the other hand, 72% of the controls belonged to urban locality and 28% belonged to rural locality. A study done by **Deborah van Middendorp et al**[60], also noted higher incidence of hypertension among females of urban background. The predominance of most of the study population belonging to non rural setting could be because the study was conducted in a tertiary care hospital, so most of the patients who presented to this centre belonged to an urban background.

In the present study, among cases, nearly half (49%) belonged to extended family, and a quarter (26%) belonged to nuclear family with another quarter (25%) belonging to joint family. Similar distribution was seen among controls - 40% belonged to extended family, 32%

belonged to nuclear family and 28% belonged to joint family. This could be because of traditional South Asian set up of societies in which the newlywed couple usually becomes part of the husband's extended family, including his parents and siblings. Rarely do couples set up homes of their own. The results with respect to family type were comparable in both the groups which indicates that at a glance the presence or absence of hypertension was not related to the family type in both the groups.

In our study, it was seen that majority of the cases (71%) had gestational age of >20 weeks at detection of hypertension. Most of the cases had pre-eclampsia (47%) followed by chronic hypertension in 29% cases and gestational hypertension in 24% cases. Similar findings were observed in various hospital-based studies done by **Nadkarni J et al**[61], **Prakash J et al**[62] and **Bangal VB et al**[63], where frequency of preeclampsia and eclampsia was found to be higher especially as it manifests after 20 weeks of gestation. This may be explained by the fact that hypertensive status is usually not known to the pregnant women and is detected later as most of the pregnant women visit hospital only after 20 weeks of gestation when definitive symptoms appear. Also analogous results were seen in a multicenter study by **Matthys LA et al**[64] which showed that approximately 30% of hypertensive disorders of pregnancy were due to chronic hypertension, while 70% of the cases were diagnosed as gestational hypertension/ preeclampsia.

Regarding the presence of psychiatric co-morbidity in hypertensive pregnant females, our study showed that more than half of the study population had reported some form of psychiatric morbidity with there being 64% prevalence among cases by using MINI version 5.0.0. Prevalence of Major Depressive Disorder was greatest (34%), followed by Generalised Anxiety Disorder (24%), others showed lesser but still noticeable prevalence with Obsessive Compulsive Disorder (5%), Social phobia/ Social Anxiety Disorder (5%),

Agoraphobia (2%), and lastly Manic/Hypomanic episode (1%) and Panic attack/disorder also only noted in 1% of the cases.
A high-risk pregnancy is defined as any pregnancy in which there is evidence of actual or potential threat of harm to the life or health of the mother and/or the baby because of a disorder(like in our study it is hypertensive disorder) or situation coincidental with or unique to pregnancy.[65]

A study by **Mccain GC et al[66]** evaluating the experience of high-risk pregnancy described the emotional responses to high-risk pregnancy events as reported by the parents involved, as follows: vulnerability of pregnancy, the realization that the pregnancy outcome was at risk; heightened anxiety, since normal activities were restricted because of medical symptoms; and the inevitability of premature delivery, with realization that preterm labor and delivery were imminent. Women who had had a high-risk pregnancy demonstrated a significantly higher level of stress and related negative emotions as they dealt with the stress and worse emotions than women with normal pregnancies.
Variation from the present results was seen in a survey done by **Jason Raina et al[67]**in which 9,097,355 pregnant women were recruited using Healthcare Cost and Utilization Project Nationwide Inpatient Sample data from 2004 through 2014. Prevalence of maternal anxiety, depression, bipolar disorder and mood disorder and trends of gestational hypertension, preeclampsia and eclampsia was calculated and it was found that anxiety rather than depression showed consistently increased risk of gestational hypertension [adjusted odds ratio(aOR)1.324, 95% CI-1.255-1.397], preeclampsia (aOR1.522, 95% CI 1.444-1.604), with the strongest association noted with eclampsia (aOR- 1.813, 95% CI- 1.260-2.610). The variation in results from our study could be because of the large sample size taken in their study as compared to our study.

In the current study, no significant difference was seen between psychiatric comorbidity and type of hypertensive disorder of pregnancy.

However, in our study, it was seen that nearly a third of the hypertensive pregnant females had Major Depressive Disorder. Furthermore, significant association was found between presence of psychiatric comorbidity and major depressive disorder in hypertensive pregnant females ($p<0.001$) which means that out of the cases who had psychiatric comorbidity, significant proportion of them had Major Depressive Disorder. This finding is similar to results noted in a study by **Elsayda Hamdy Nasr et al**[68], where there were highly statistically significant associations between woman's hypertensive disorder and severity level of psychological symptoms (depression and stress), p= (0.000 &0.000).

In the present study, it was found that 24% of the hypertensive pregnant females (cases) had generalised anxiety disorder. Significant association was found between presence of psychiatric comorbidity and generalised anxiety disorder in hypertensive pregnant females ($p<0.001$) which means that significant proportion of cases who reported psychiatric comorbidity in our study had Generalised Anxiety Disorder. Cases with preeclampsia had higher prevalence of Generalised Anxiety Disorder- 34% as compared to patients with gestational hypertension- 16.7% and chronic hypertension- 13.8% while cases with chronic hypertension instead had higher prevalence of Major Depressive Disorder (44.8%) as compared to those with preeclampsia (34%) and gestational hypertension (20.8%).

Similarly, in a study by **Byatt N et al**[69], it was seen that that high-risk obstetrical inpatients commonly experience depression (26.9%) symptoms and anxiety (12.6%) symptoms. It could be due to the highly stressful and uncertain environment of pregnancy complications. Hypertension and inflammation during pregnancy is associated with increased Blood Brain Barrier permeability, impairments in cerebral blood flow autoregulation, cerebral edema, and neuroinflammation.[70-74] Therefore, one could postulate that the

increase in Blood Blood Barrier permeability or decrease in Blood Brain Barrier function could contribute to changes in the neural environment during pregnancy or the postpartum period leading to behavioral changes like anxiety related behaviors. [75,76]

Similar observation was noted in a study conducted by **Masoumeh Kordi et al**[77], where anxiety was found to be associated with preeclampsia. The findings of their study however exhibited that only 5.3% of patients with preeclampsia and 0.7% of cases in the non preeclamptic group suffered from very severe anxiety. The odds ratio of preeclampsia in their case group, when anxiety was detected, was 2.90 times higher than in their control group. However, in contrast, in the study by **Andersson et al. (2004)**[78], no significant relationship between anxiety and depression with preeclampsia was seen. The variation in results could be due to the fact that the prevalence of depression or anxiety may be affected by the time point in pregnancy at which symptoms are assessed, types of instrument used i.e. use of standard clinical interviews or screening tools, and different cut-off points on screening tools .

Regarding the presence of psychiatric co-morbidity in normotensive term pregnant females, our study showed a 38% prevalence among our control group patients by using MINI version 5.0.0. Notably the rates of psychiatric disorders especially depression and anxiety that were reported by the control group were lower than the rates reported by the case group in the present study. Similarly, the prevalence of Major Depressive Disorder was lower (14%) followed by Generalised Anxiety Disorder - 9%, Obsessive Compulsive Disorder - 5%, Social phobia/ Social Anxiety Disorder- 2%, Panic attack/disorder- 2%, Agoraphobia – 1%, Manic/Hypomanic episode- 1% and suicidality- 1%.

Data collected from a study by **Hashima E Nasreen et al**[79] showed a similar prevalence of Antenatal Depressive Symptoms that was 18%.

However a greater prevalence than our study for Antenatal Anxiety Symptoms was noted which was 29%. Similarly, in a study by **J. Ø. Berle et al**[22], of the 680 pregnant women, 10.4% had anxiety disorder, 2.8% had depression and 1.8% had co morbid anxiety and depression, which is in contrast with the current study's findings in terms of prevalence of depression. The variation in results could be because of the smaller sample size in our study.

A cross-sectional community-based descriptive enquiry[23] was conducted in India among 165 antenatal women from January to October 2014 in Ghazipur, an urbanized village in East Delhi which showed similar prevalence of depression, anxiety, and stress which was 25.5%, 63%, and 23%, respectively. In studies by **Neziroglu et al**[26] and **Williams et al**[27], pregnancy was found to be associated with onset of OCD in 39% and 13% patients, respectively.

In our study, it was found that the mean WHO QOL BREF scores of hypertensive pregnant females on physical, psychological, social and environmental domains were 53.42±11.92, 60.04±13.68, 64.79±12.52 and 70.57±6.78 respectively which implied higher scores on social and environmental domains. Similar findings were reported in a study done by **Eva Mautner et al**[52], where mean WHO QOL BREF scores of hypertensive pregnant females on physical, psychological, social and environmental domains were 68.65±17.90, 68.06±10.00, 87.04±11.15 and 82.99±10.62 respectively which implies higher QOL scores on social and environmental domains as compared to physical and psychological domains. It could be because women with complications in their pregnancy like hypertension get more social support and attention than others and also 75% of the cases in our study belonged to extended and joint families which ensured them greater social as well as financial security. The better scores in social and environmental domains also indicated that high-quality clinical care, information, and support can help to ease the physiological impact of hypertensive disorder in pregnant females.

In our study, it was seen that there was significant association between environmental domain of QOL and type of hypertensive disorder of pregnancy (p=0.038). Mean QOL score in environmental domain was more in patients with gestational hypertension (73.29±6.39) followed by cases with pre- eclampsia (70.72±6.51) and gestational hypertension (68.07±6.81). QOL mean scores were comparatively lower on physical and psychological domains in patients with preeclampsia than with gestational hypertension and chronic hypertension. This could be because preeclampsia being a comparatively more severe condition than gestational and chronic hypertension affects both physical and mental health of affected females adversely. Environmental domain which addresses the financial resources, home and physical environment was adequate in our cases since the patients having discrepancy in any of them were not included in the present study.

The mean WHO QOL BREF scores of normotensive pregnant females on physical, psychological, social and environmental domains were 59.59, 63.94, 68.58 and 69.73 respectively. It was seen that there was statistically significant difference ($p<0.05$) of Quality of Life in physical (p=0.000) and psychological (p=0.048) domains among cases as compared to controls. Lower mean scores of QOL were observed in all domains except environmental domain in cases as compared to controls which is suggestive of a poorer quality of life among hypertensive pregnant females. This could be because after being diagnosed with risky pregnancy and Pre-eclampsia and during hospitalization, these women have a better perception of their disease and they start to question themselves about what led to their current condition. This may generate a feeling of guilt and anxiety, with a consequent change in their quality of life.[69,80]The results of our study were similar to a study done by **Kellly Patrícia Medeiros Falcãoa et al**[14] comparing quality of life between hypertensive (cases) and normotensive pregnant females (controls), lower mean scores of QOL were observed in cases in all domains compared to

the controls, showing that hypertension is associated with low QOL of pregnant woman, mainly in health, physical, and psycho-emotional aspects. A statistically significant difference was observed in the total QOL index (p= 0.003), in the health and functioning (p= 0.001) andpsycho- emotional (p = 0.01) domains. No statistically significant differences however were observed in the socioeconomic and family domains.

In our study, significant difference (p<0.05) was seen in all domains of QOL with respect to presence of psychiatric comorbidity in controls. Among controls, females without any psychiatric comorbidity had significantly better Quality Of Life scores than those with psychiatric comorbidity. In the present study, significant difference was seen in physical (p< 0.001), psychological (p<0.001) and social relationship (p=0.001) domains of QOL in non hypertensive pregnant females with Major Depressive Disorder/ Recurrent Depressive Disorder. This is likely to be expected as depression affects a person not only psychologically but also physically and hampers their social life as well. Similar results were seen in a study by **Fatemeh Abbaszadeh et al**[81] in which an inverse relationship between quality of life and depression in pregnancy (P = 0.0001) was seen. **Forozandeh et al**[82] also remarked that depressed pregnant women had more health-related physical and functional impairment. **Lee et al**[83] also reported that depressed pregnant women suffer from impaired physical and mental health and lower levels of QOL.

In the present study, significant difference was seen in psychological (p=0.001) and social relationship (p= 0.025) domains of QOL in normotensive pregnant females with Generalised Anxiety Disorder. This could be because the persistent anxiety symptoms in affected females not only affects their psychological well being but also negatively impacts the social domain of their life as a person with Generalised Anxiety Disorder has difficulty tackling social situations in day-to-day life. This is similar to a study done by **Jing-ping Yang et**

al[84] where it was seen that compared with women without anxiety symptoms, the pregnant women with anxiety symptoms had worse physical and mental health-related quality of life and a lower level of seven domains of 36-Item Short-Form Health Survey (SF-36) (general health ; role limitations due to physical problems, role limitations due to emotional problems , social functioning, bodily pain , vitality and mental health). Similar results were seen in a study by **Bai et al**[85] who found anxiety symptoms were a predictor of poor health-related quality of life. In summary, pregnancy causes intense changes, both physical and psychological, in women's lives. Hypertension was found to be a factor of strong interference in the pregnant woman's QOL, causing lower scores in all QOL domains of hypertensive pregnant women compared to normotensive pregnant women and also predisposing them to psychiatric comorbidities.

LIMITATIONS

- Our study was conducted on a small sample of hypertensive pregnant patients which is not representative of the total hypertensive pregnant population. This limits the generalisation of results on hypertensive pregnant patients.
- The QOL was self reported and subjective rather than objective.
- The premorbid personality traits and coping skills were not assessed in our study which could have confounded the results.

As this was a cross-sectional study, the study subjects were not followed up after a single visit. The possibility that some of the subjects might have developed psychiatric comorbidity or had impaired QOL at a later stage of their pregnancy cannot be refuted.

CONCLUSIONS AND SUMMARY

The study was conducted on 100 hypertensive pregnant patients (cases) and 100 normotensive pregnant females (controls) to assess the prevalence of psychiatric comorbidities and the impact on their QOL. The data thus obtained was analysed and the following conclusions were reached.

- Majority of the cases and controls were in age group of 25-30 years, educated, homemakers, belonged to urban locality, lived in extended family.
- 64% of the cases and 38% of controls had psychiatric comorbidity.
- Major Depressive Disorder/Recurrent Depressive Disorder and Generalised Anxiety Disorder had the highest prevalence among all psychiatric comorbidities in both cases and controls.
- There was a significant difference in prevalence of psychiatric comorbidity between cases and controls with cases having more prevalence as compared to controls.
- No statistically significant association was seen between psychiatric comorbidity and type of hypertensive disorder of pregnancy in cases.
- Mean WHO QOL BREF scores were lower in all domains (physical, psychological, social relationship and environmental) in cases as compared to controls. Statistically significant difference was seen in physical and psychological domains in cases as compared to controls with cases having lower mean scores and poorer Quality Of Life.
- There was significant association of Quality Of Life on all domains with respect to presence of psychiatric comorbidity in controls.
- Significant association ($p<0.05$) was seen between Quality Of Life on physical and psychological domains in cases.
- Significant association ($p<0.05$) was seen between environmental domain of QOL and type of hypertensive disorder of pregnancy.

Our study suggests potential associations between maternal psychiatric disorders and pregnancy hypertensive diseases and their impact on their Quality Of Life. It calls for future prospective cohorts among pregnant women with various psychopathologies and subtypes of pregnancy hypertensive diseases. At this time, consideration for targeted screening of psychiatric disorders as potential risk markers may allow for timely intervention and surveillance for hypertensive diseases of pregnancy. All the pregnant females need to be evaluated for any psychiatric disorders if present so that they can provided timely treatment according to symptom severity; which in turn will not only enhance their mental health but will also enhance their Quality Of Life.

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KEY TO MASTER CHART

CASES

AGE GROUP

A. 20-25 YEARS
B. 25-30 YEARS
C. 30-35 YEARS
D. 35-40 YEARS

EDUCATION

A. ILLITERATE
B. UPTO MATRICULATION
C. MATRICULATION
D. HIGHER SECONDARY/DIPLOMA
E. GRADUATE/POSTGRADUATE

OCCUPATION

A. SKILLED
B. SEMISKILLED
C. PROFESSIONAL
D. HOMEMAKER

HUSBAND'S EDUCATION

A. ILLITERATE
B. UPTO MATRICULATION
C. MATRICULATION
D. HIGHER SECONDARY/DIPLOMA
E. GRADUATE/POSTGRADUATE

HUSBAND'S OCCUPATION

A. SKILLED
B. SEMISKILLED
C. PROFESSIONAL
D. UNEMPLOYED
E. RETIRED

LOCALITY

A. RURAL
B. URBAN

TYPE OF FAMILY

A. NUCLEAR
B. EXTENDED
C. JOINT
D. OTHER

SYSTOLIC BP

A. 140-159 mmHg
B. ≥ 160 mmHg

DIASTOLIC BP

A. 90-109 mmHg
B. ≥ 110 mmHg

GESTATIONAL AGE AT DETECTION OF HYPERTENSION

A. <20 WEEKS
B. 20-24 WEEKS
C. 25-28 WEEKS
D. 29-32 WEEKS
E. 33-36 WEEKS

HYPERTENSIVE DISORDER OF PREGNANCY

A. GESTATIONAL HYPERTENSION
B. CHRONIC HYPERTENSION
C. PREECLAMPSIA

CONTROLS

AGE GROUP

A. 20-25 YEARS
B. 25-30 YEARS
C. 30-35 YEARS
D. 35-40 YEARS

EDUCATION

A. ILLITERATE
B. UPTO MATRICULATION
C. MATRICULATION
D. HIGHER SECONDARY/DIPLOMA
E. GRADUATE/POSTGRADUATE

OCCUPATION

A. SKILLED
B. SEMISKILLED
C. PROFESSIONAL
D. HOMEMAKER

HUSBAND'S EDUCATION

A. ILLITERATE
B. UPTO MATRICULATION
C. MATRICULATION
D. HIGHER SECONDARY/DIPLOMA
E. GRADUATE/POSTGRADUATE

HUSBAND'S OCCUPATION

A. SKILLED
B. SEMISKILLED
C. PROFESSIONAL
D. UNEMPLOYED
E. RETIRED

LOCALITY

A. RURAL
B. URBAN

TYPE OF FAMILY

A. NUCLEAR
B. EXTENDED
C. JOINT
D. OTHER

S.NO.	MRD NO.	NAME INITIALS	AGE GROUP	AGE (YEARS)	PERIOD OF GESTATION (WEEKS)	EDUCATION	OCCUPATION	HUSBAND EDUCATION	HUSBAND OCCUPATION	LOCALITY	FAMILY TYPE	INFERTILITY	BAD OBSTETRICAL HISTORY	DOMESTIC VIOLENCE	MARITAL DISHARMONY	PROFESSIONAL INSTABILITY	ECONOMIC INSTABILITY	DIABETES MELLITUS	HYPERTENSION	SYSTOLIC BP (mmHg)	DIASTOLIC BP(mmHg)
1	929284	JK	B	26	28.3	D	D	B	A	A	A	No	No	No	No	No	No	No	Yes	A	A
2	943396	KK	C	31	30.1	B	D	B	A	A	C	No	No	No	No	No	No	No	Yes	A	A
3	678459	RB	C	31	35	E	C	E	C	B	C	No	No	No	No	No	No	No	Yes	A	A
4	947049	D	B	27	30.2	E	D	E	C	B	B	No	No	No	No	No	No	No	Yes	A	A
5	952226	RK	D	36	21.5	C	D	C	A	A	B	No	No	No	No	No	No	No	Yes	A	A
6	958686	SM	B	29	32.2	E	C	E	C	B	B	No	No	No	No	No	No	No	Yes	A	A
7	556975	D	B	28	36	D	D	E	C	B	C	No	No	No	No	No	No	No	Yes	B	B
8	804756	HK	B	29	34	C	D	D	B	B	B	No	No	No	No	No	No	No	Yes	A	A
9	594922	ND	A	24	39.2	C	D	C	B	B	A	No	No	No	No	No	No	No	Yes	B	B
10	320943	PK	C	32	33	D	D	C	C	A	B	No	No	No	No	No	No	No	Yes	A	A
11	961266	P	B	27	39.3	E	C	E	C	B	B	No	No	No	No	No	No	No	Yes	A	A
12	411117	RK	C	32	23.4	C	D	C	C	B	B	No	No	No	No	No	No	No	Yes	A	A
13	964196	A	C	34	29.3	C	D	C	C	B	A	No	No	No	No	No	No	No	Yes	B	B
14	924381	IK	B	26	34.1	D	C	D	C	A	A	No	No	No	No	No	No	No	Yes	A	A
15	966144	HK	D	37	30.1	B	D	C	B	A	C	No	No	No	No	No	No	No	Yes	A	A
16	968731	LJ	B	26	38.2	E	C	E	C	B	A	No	No	No	No	No	No	No	Yes	B	B
17	968475	P	A	23	37	D	D	D	B	B	B	No	No	No	No	No	No	No	Yes	B	B
18	969909	SK	D	36	34.2	B	D	C	B	A	B	No	No	No	No	No	No	No	Yes	A	A
19	969936	S	C	33	30.4	C	D	C	B	A	B	No	No	No	No	No	No	No	Yes	A	A
20	952973	SK	C	31	36.6	C	D	D	B	B	B	No	No	No	No	No	No	No	Yes	A	A
21	883833	ES	B	28	37.2	C	D	D	B	B	A	No	No	No	No	No	No	No	Yes	B	B
22	881654	ZA	A	21	38	B	D	C	B	B	B	No	No	No	No	No	No	No	Yes	A	A
23	975578	RK	C	31	36.5	C	D	C	B	A	B	No	No	No	No	No	No	No	Yes	B	B
24	976092	HK	D	36	28.3	E	C	E	C	B	A	No	No	No	No	No	No	No	Yes	A	A
25	278825	GK	C	31	20.3	D	D	D	C	A	C	No	No	No	No	No	No	No	Yes	A	A
26	58123	SK	C	32	32.1	D	D	C	A	A	B	No	No	No	No	No	No	No	Yes	B	B
27	997630	AK	D	36	28.3	D	D	D	B	A	C	No	No	No	No	No	No	No	Yes	A	A
28	998578	SK	A	24	27	E	C	E	C	B	A	No	No	No	No	No	No	No	Yes	A	A
29	997123	GK	C	32	32	C	D	D	B	A	C	No	No	No	No	No	No	No	Yes	A	A
30	1006486	HK	B	27	29.3	C	D	D	B	A	B	No	No	No	No	No	No	No	Yes	B	B
31	960039	KK	C	34	34.5	E	C	E	C	B	A	No	No	No	No	No	No	No	Yes	A	A
32	1007816	KK	A	24	24.5	E	C	E	C	B	C	No	No	No	No	No	No	No	Yes	A	A
33	1025423	HK	A	23	28	D	D	D	B	B	B	No	No	No	No	No	No	No	Yes	B	B
34	1023867	A	A	24	24.3	C	D	D	B	B	C	No	No	No	No	No	No	No	Yes	A	A
35	1072319	S	C	31	20.3	E	C	E	C	B	B	No	No	No	No	No	No	No	Yes	A	A
36	1062712	M	B	26	24	D	D	D	B	B	B	No	No	No	No	No	No	No	Yes	B	B
37	1021979	AB	C	34	28.2	D	D	D	A	A	C	No	No	No	No	No	No	No	Yes	A	A
38	106090	S	D	37	26.3	E	D	E	C	B	A	No	No	No	No	No	No	No	Yes	A	A
39	1054188	VP	B	26	35.2	D	D	D	A	B	B	No	No	No	No	No	No	No	Yes	B	B
40	886630	V	B	27	22.3	E	C	E	C	B	A	No	No	No	No	No	No	No	Yes	A	A
41	998621	AS	B	26	26	D	D	C	A	B	C	No	No	No	No	No	No	No	Yes	A	A
42	1058148	SA	B	29	28	D	D	E	C	B	A	No	No	No	No	No	No	No	Yes	A	A
43	1056496	PS	D	38	34	D	D	D	A	B	B	No	No	No	No	No	No	No	Yes	A	A
44	218567	P	B	29	31	A	D	A	A	B	B	No	No	No	No	No	No	No	Yes	A	A
45	1056495	SB	C	33	39	D	D	C	A	A	B	No	No	No	No	No	No	No	Yes	A	A
46	1049909	VK	D	36	16.1	E	C	E	C	B	A	No	No	No	No	No	No	No	Yes	A	A
47	115522	TK	C	31	20.2	A	D	B	A	A	B	No	No	No	No	No	No	No	Yes	A	A
48	1051574	R	D	37	28	D	D	C	B	B	B	No	No	No	No	No	No	No	Yes	A	A
49	1031958	JK	B	26	31	D	D	D	C	A	B	No	No	No	No	No	No	No	Yes	A	A
50	1063573	AK	D	36	28.2	E	D	D	A	A	C	No	No	No	No	No	No	No	Yes	A	A

S.NO.	MRD NO.	GESTATIONAL AGE AT DETECTION OF HEYPERTENSION(WEEKS)	ORAL MEDICATIONS	INTRAVENOUS MEDICATIONS	HYPERTENSIVE DISORDER OF PREGNANCY	PSYCHIATRIC COMORBIDITY	MINI MAJOR DEPRESSIVE DISORDER/ RECURRENT DEPRESSIVE DISORDER	DYSTHYMIA	SUICIDALITY	MANIC/ HYPOMANIC EPISODE	PANIC ATTACK/ DISORDER	AGORAPHOBIA	SOCIAL PHOBIA/ SOCIAL ANXIETY DISORDER	OBSESSIVE COMPULSIVE DISORDER	POSTTRAUMATIC STRESS DISORDER	ALCOHOL ABUSE/DEPENDENCE	SUBSTANCE ABUSE/DEPENDENCE(NON ALCOHOL)	PSYCHOTIC DISORDERS/MOOD DISORDER WITH PSYCHOTIC FEATURES	ANOREXIA NERVOSA
1	929284	C	No	Yes	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
2	943396	A	No	Yes	B	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
3	678459	E	Yes	No	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
4	947049	C	Yes	No	A	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
5	952226	A	No	Yes	B	Yes	Yes	No	No	No	No	No	Yes	No	No	No	No	No	No
6	958686	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
7	556975	C	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
8	804756	B	No	Yes	A	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
9	594922	B	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
10	320943	C	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
11	961266	B	No	Yes	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
12	411117	B	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
13	964196	B	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
14	924381	A	Yes	No	B	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
15	966144	C	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
16	968731	C	No	Yes	C	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No	No
17	968475	C	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
18	969909	A	No	Yes	B	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
19	969936	A	Yes	No	B	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
20	952973	B	Yes	No	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
21	883833	C	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
22	881654	B	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
23	975578	B	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
24	976092	B	Yes	No	A	Yes	No	No	No	No	No	Yes	Yes	No	No	No	No	No	No
25	278825	A	No	Yes	B	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No	No
26	58123	C	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
27	997630	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
28	998578	B	No	Yes	C	Yes	No	No	No	No	Yes	No	No	No	No	No	No	No	No
29	997123	B	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
30	1006486	B	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
31	960039	B	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
32	1007816	B	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
33	1025423	B	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
34	1023867	B	No	Yes	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
35	1072319	A	No	Yes	B	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
36	1062712	B	No	Yes	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
37	1021979	B	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
38	106090	B	No	Yes	A	Yes	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No
39	1054188	C	No	Yes	C	Yes	Yes	No	No	No	No	Yes	No	No	No	No	No	No	No
40	886630	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
41	998621	B	No	Yes	C	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No	No
42	1058148	B	No	Yes	A	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
43	1056496	C	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
44	218567	C	No	Yes	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
45	1056495	C	No	Yes	A	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No	No
46	1049909	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
47	115522	A	No	Yes	B	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
48	1051574	C	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
49	1031958	C	No	Yes	A	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
50	1063573	D	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes	No

S.NO.	MRD NO.	BULIMIA NERVOSA	GENERALISED ANXIETY DISORDER	ANTISOCIAL PERSONALITY DISORDER	WHO- BREF DOMAIN 1 RAW SCORE	DOMAIN 1 TRANSFORMED SCORE(4-20)	DOMAIN 1 TRANSFORMED SCORE(0-100)	DOMAIN 2 RAW SCORE	DOMAIN 2 TRANSFORMED SCORE(4-20)	DOMAIN 2 TRANSFORMED SCORE(0-100)	DOMAIN 3 RAW SCORE	DOMAIN 3 TRANSFORMED SCORE (4-20)	DOMAIN 3 TRANSFORMED SCORE(0-100)	DOMAIN 4 RAW SCORE	DOMAIN 4 TRANSFORMED SCORE (4-20)	DOMAIN 4 TRANSFORMED SCORE (0-100)
1	929284	No	No	No	23	13	56	23	15	69	13	17	81	29	15	69
2	943396	No	No	No	19	11	44	18	12	50	11	15	69	27	14	63
3	678459	No	Yes	No	25	14	63	17	11	44	10	13	56	25	13	56
4	947049	No	Yes	No	25	14	63	20	13	56	12	16	75	27	14	63
5	952226	No	No	No	16	9	31	14	9	31	9	12	50	24	12	50
6	958686	No	No	No	18	10	38	16	11	44	9	12	50	24	12	50
7	556975	No	No	No	17	10	38	17	11	44	9	12	50	27	14	63
8	804756	No	Yes	No	22	13	56	20	13	56	11	15	69	31	16	75
9	594922	No	No	No	20	11	44	19	13	56	11	15	69	27	14	63
10	320943	No	Yes	No	18	10	38	18	12	50	12	16	75	31	16	75
11	961266	No	No	No	23	13	56	21	14	63	13	17	81	31	16	75
12	411117	No	No	No	25	14	63	21	14	63	12	16	75	30	15	69
13	964196	No	No	No	19	11	44	20	13	56	12	16	75	31	16	75
14	924381	No	No	No	19	11	44	17	11	44	11	15	69	31	16	75
15	966144	No	No	No	26	15	69	21	14	63	12	16	75	29	15	69
16	968731	No	No	No	20	11	44	18	12	50	11	15	69	30	15	69
17	968475	No	Yes	No	19	11	44	19	13	56	13	17	81	27	14	63
18	969909	No	No	No	25	14	63	20	13	56	12	16	75	30	15	69
19	969936	No	No	No	25	14	63	23	15	69	12	16	75	30	15	69
20	952973	No	No	No	23	13	56	23	15	69	13	17	81	31	16	75
21	883833	No	Yes	No	19	11	44	19	13	56	13	17	81	27	14	63
22	881654	No	No	No	20	11	44	19	13	56	12	16	75	26	13	56
23	975578	No	No	No	24	14	63	23	15	69	13	17	81	31	16	75
24	976092	No	No	No	25	14	63	21	14	63	12	16	75	31	16	75
25	278825	No	No	No	21	12	50	19	13	56	9	12	50	29	15	69
26	58123	No	Yes	No	27	15	69	22	15	69	11	15	69	34	17	81
27	997630	No	No	No	24	14	63	22	15	69	12	16	75	31	16	75
28	998578	No	No	No	22	13	56	22	15	69	12	16	75	31	16	75
29	997123	No	No	No	27	15	69	24	16	75	12	16	75	33	7	81
30	1006486	No	No	No	25	14	63	25	17	81	12	16	75	33	17	81
31	960039	No	Yes	No	17	10	38	17	11	44	9	12	50	32	16	75
32	1007816	No	No	No	17	10	38	20	13	56	10	13	56	31	16	75
33	1025423	No	No	No	26	15	69	23	15	69	12	16	75	31	16	75
34	1023867	No	No	No	24	14	63	23	15	69	12	16	75	31	16	75
35	1072319	No	Yes	No	18	10	38	17	11	44	10	13	56	29	15	69
36	1062712	No	No	No	24	14	63	23	15	69	12	16	75	30	15	69
37	1021979	No	No	No	23	13	56	23	15	69	10	13	56	32	16	75
38	106090	No	No	No	28	16	75	27	18	88	13	17	81	37	19	94
39	1054188	No	No	No	20	11	44	21	14	63	10	13	56	31	16	75
40	886630	No	No	No	23	13	56	21	14	63	10	13	56	31	16	75
41	998621	No	Yes	No	21	12	50	19	13	56	10	13	56	30	15	69
42	1058148	No	No	No	16	9	31	15	10	38	7	9	31	28	14	63
43	1056496	No	No	No	20	11	44	17	11	44	10	13	56	29	15	69
44	218567	No	No	No	26	15	69	22	15	69	10	13	56	30	15	69
45	1056495	No	No	No	23	13	56	20	13	56	9	12	50	30	15	69
46	1049909	No	No	No	27	15	69	24	16	75	10	13	56	30	15	69
47	115522	No	No	No	25	14	63	18	12	50	9	12	50	29	15	69
48	1051574	No	No	No	15	9	31	18	12	50	8	11	44	25	13	56
49	1031958	No	Yes	No	19	11	44	18	12	50	8	11	44	31	16	75
50	1063573	No	No	No	15	9	31	14	9	31	7	9	31	28	14	63

S.NO.	MRD NO.	NAME INITIALS	AGE GROUP	AGE (YEARS)	PERIOD OF GESTATION (WEEKS)	EDUCATION	OCCUPATION	HUSBAND EDUCATION	HUSBAND OCCUPATION	LOCALITY	FAMILY TYPE	INFERTILITY	BAD OBSTETRICAL HISTORY	DOMESTIC VIOLENCE	MARITAL DISHARMONY	PROFESSIONAL INSTABILITY	ECONOMIC INSTABILITY	DIABETES MELLITUS	HYPERTENSION	SYSTOLIC BP (mmHg)	DIASTOLIC BP(mmHg)
51	1116412	DK	C	32	24	A	D	B	A	A	C	No	No	No	No	No	No	No	Yes	B	B
52	1109079	S	C	32	32	A	D	A	A	A	C	No	No	No	No	No	No	No	Yes	A	A
53	928927	SK	B	29	36.1	B	D	B	B	A	C	No	No	No	No	No	No	No	Yes	B	B
54	690406	MG	D	35	36.2	D	D	E	C	B	A	No	No	No	No	No	No	No	Yes	A	A
55	992859	AK	B	28	30	D	A	E	B	A	B	No	No	No	No	No	No	No	Yes	A	A
56	1107637	MJ	B	28	37.6	C	D	D	A	B	A	No	No	No	No	No	No	No	Yes	A	A
57	1105383	RR	B	26	24	A	D	A	B	B	C	No	No	No	No	No	No	No	Yes	A	A
58	110186	KK	C	31	30.6	B	D	B	B	A	B	No	No	No	No	No	No	No	Yes	A	A
59	1095856	KK	C	31	30	A	D	B	A	A	B	No	No	No	No	No	No	No	Yes	B	B
60	1105963	VM	B	29	30.1	E	C	E	C	B	A	No	No	No	No	No	No	No	Yes	A	A
61	1118450	JK	B	26	25	D	D	D	C	B	B	No	No	No	No	No	No	No	Yes	A	A
62	1118224	RK	C	30	25.3	C	D	D	B	B	A	No	No	No	No	No	No	No	Yes	B	B
63	1119944	RK	A	22	28.2	A	D	B	A	A	B	No	No	No	No	No	No	No	Yes	A	A
64	1119545	S	D	38	26	A	D	A	A	B	B	No	No	No	No	No	No	No	Yes	A	A
65	1121826	PK	B	27	29.3	A	D	B	A	B	C	No	No	No	No	No	No	No	Yes	B	B
66	1122342	JK	B	26	27	D	D	D	A	A	C	No	No	No	No	No	No	No	Yes	A	A
67	1122381	KK	D	38	35.1	C	D	D	A	A	B	No	No	No	No	No	No	No	Yes	B	B
68	1123817	SK	B	28	38.1	D	D	E	A	B	B	No	No	No	No	No	No	No	Yes	A	A
69	112494	MK	C	33	30	A	D	B	A	A	C	No	No	No	No	No	No	No	Yes	A	A
70	1113566	TD	C	34	28.2	A	D	B	A	A	B	No	No	No	No	No	No	No	Yes	A	A
71	403491	GR	B	27	31.2	B	D	B	A	A	C	No	No	No	No	No	No	No	Yes	A	A
72	940891	NK	B	28	26	D	B	E	A	B	B	No	No	No	No	No	No	No	Yes	A	A
73	198646	P	D	38	32.1	E	D	D	B	B	A	No	No	No	No	No	No	No	Yes	A	A
74	1086089	S	C	32	37.3	E	D	E	A	B	B	No	No	No	No	No	No	No	Yes	A	A
75	454350	YR	A	24	31.2	B	B	B	A	B	B	No	No	No	No	No	No	No	Yes	A	A
76	1126468	HK	D	35	22.6	B	B	A	A	A	B	No	No	No	No	No	No	No	Yes	A	A
77	1123817	SK	B	28	38	A	D	B	B	B	C	No	No	No	No	No	No	No	Yes	A	A
78	1127172	JK	C	31	27.3	E	C	E	D	B	A	No	No	No	No	No	No	No	Yes	A	A
79	939071	KK	B	27	29.3	D	D	E	B	B	B	No	No	No	No	No	No	No	Yes	A	A
80	1010770	RK	C	30	35.4	C	D	D	B	A	C	No	No	No	No	No	No	No	Yes	B	B
81	1010754	GK	B	27	33.4	B	D	B	A	B	B	No	No	No	No	No	No	No	Yes	A	A
82	502018	RG	C	33	37.2	B	D	A	B	B	B	No	No	No	No	No	No	No	Yes	A	A
83	1126468	HK	D	35	22.6	A	D	B	B	B	C	No	No	No	No	No	No	No	Yes	A	A
84	985106	AG	B	26	36	E	C	E	A	B	A	No	No	No	No	No	No	No	Yes	A	A
85	591822	RA	D	36	18	D	D	E	A	B	B	No	No	No	No	No	No	No	Yes	A	A
86	1115618	H	B	28	29	D	B	E	C	B	B	No	No	No	No	No	No	No	Yes	A	A
87	1127812	JB	C	32	13.1	B	D	B	B	B	A	No	No	No	No	No	No	No	Yes	A	A
88	118279	SJ	B	28	38	E	C	E	C	B	B	No	No	No	No	No	No	No	Yes	A	A
89	1118912	PA	C	30	30	D	B	E	A	B	B	No	No	No	No	No	No	No	Yes	A	A
90	1131712	IM	A	24	20	E	C	E	A	B	A	No	No	No	No	No	No	No	Yes	A	A
91	1129445	MK	C	34	28.6	A	D	B	A	B	A	No	No	No	No	No	No	No	Yes	A	A
92	1129991	AG	D	39	33.1	B	A	B	A	B	C	No	No	No	No	No	No	No	Yes	A	A
93	1130893	SK	B	27	22.5	A	D	B	A	A	C	No	No	No	No	No	No	No	Yes	A	A
94	1131711	S	C	33	37.4	B	D	A	A	A	B	No	No	No	No	No	No	No	Yes	A	A
95	728343	AS	B	29	36.1	D	D	C	C	B	B	No	No	No	No	No	No	No	Yes	B	B
96	1129523	MB	B	27	33.2	E	D	E	C	B	A	No	No	No	No	No	No	No	Yes	A	A
97	208655	R	C	34	30.1	D	D	E	C	B	A	No	No	No	No	No	No	No	Yes	A	A
98	453775	SG	B	28	38	D	C	E	B	B	B	No	No	No	No	No	No	No	Yes	A	A
99	1133200	GK	C	31	30.1	A	D	B	B	A	C	No	No	No	No	No	No	No	Yes	A	A
100	1132363	D	B	25	28.1	B	B	A	B	B	B	No	No	No	No	No	No	No	Yes	A	A

S.NO.	MRD NO.	GESTATIONAL AGE AT DETECTION OF HEYPERTENSION(WEEKS)	ORAL MEDICATIONS	INTRAVENOUS MEDICATIONS	HYPERTENSIVE DISORDER OF PREGNANCY	PSYCHIATRIC COMORBIDITY	MINI MAJOR DEPRESSIVE DISORDER/ RECURRENT DEPRESSIVE DISORDER	DYSTHYMIA	SUICIDALITY	MANIC/ HYPOMANIC EPISODE	PANIC ATTACK/ DISORDER	AGORAPHOBIA	SOCIAL PHOBIA/ SOCIAL ANXIETY DISORDER	OBSESSIVE COMPULSIVE DISORDER	POSTTRAUMATIC STRESS DISORDER	ALCOHOL ABUSE/DEPENDENCE	SUBSTANCE ABUSE/DEPENDENCE(NON ALCOHOL)	PSYCHOTIC DISORDERS/MOOD DISORDER WITH PSYCHOTIC FEATURES	ANOREXIA NERVOSA
51	1116412	A	No	Yes	B	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
52	1109079	B	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
53	928927	C	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
54	690406	C	No	Yes	A	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
55	992859	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
56	1107637	B	No	Yes	A	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No	No
57	1105383	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
58	110186	C	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
59	1095856	B	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
60	1105963	C	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
61	1118450	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
62	1118224	B	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
63	1119944	A	No	Yes	B	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
64	1119545	B	No	Yes	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
65	1121826	C	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
66	1122342	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
67	1122381	C	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
68	1123817	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
69	112494	B	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
70	1113566	B	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
71	403491	C	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
72	940891	B	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
73	198646	A	No	Yes	B	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
74	1086089	C	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
75	454350	C	No	Yes	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
76	1126468	B	No	Yes	B	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
77	1123817	A	No	Yes	B	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
78	1127172	B	No	Yes	A	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
79	939071	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
80	1010770	C	No	Yes	C	Yes	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No
81	1010754	D	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
82	502018	C	No	Yes	C	No	No	No	No	No	No	No	No	No	No	No	No	No	No
83	1126468	A	No	Yes	B	Yes	Yes	No	No	No	No	No	Yes	No	No	No	No	No	No
84	985106	D	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
85	591822	A	No	Yes	B	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
86	1115618	B	No	Yes	C	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No	No
87	1127812	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
88	118279	C	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes	No
89	1118912	B	No	Yes	A	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
90	1131712	A	No	Yes	B	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
91	1129445	B	No	Yes	C	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
92	1129991	A	No	Yes	B	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
93	1130893	A	No	Yes	B	No	No	No	No	No	No	No	No	No	No	No	No	No	No
94	1131711	D	No	Yes	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
95	728343	D	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
96	1129523	B	No	Yes	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
97	208655	B	No	Yes	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
98	453775	C	No	Yes	A	No	No	No	No	No	No	No	No	No	No	No	No	No	No
99	1133200	C	No	Yes	C	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
100	1132363	B	No	Yes	A	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No

S.NO.	MRD NO.	BULIMIA NERVOSA	GENERALISED ANXIETY DISORDER	ANTISOCIAL PERSONALITY DISORDER	WHO- BREF DOMAIN 1 RAW SCORE	DOMAIN 1 TRANSFORMED SCORE(4-20)	DOMAIN 1 TRANSFORMED SCORE(0-100)	DOMAIN 2 RAW SCORE	DOMAIN 2 TRANSFORMED SCORE(4-20)	DOMAIN 2 TRANSFORMED SCORE(0-100)	DOMAIN 3 RAW SCORE	DOMAIN 3 TRANSFORMED SCORE (4-20)	DOMAIN 3 TRANSFORMED SCORE(0-100)	DOMAIN 4 RAW SCORE	DOMAIN 4 TRANSFORMED SCORE (4-20)	DOMAIN 4 TRANSFORMED SCORE (0-100)
51	1116412	No	Yes	No	17	10	38	19	13	56	8	11	44	28	14	63
52	1109079	No	Yes	No	19	11	44	21	14	63	12	16	75	30	15	69
53	928927	No	Yes	No	18	10	38	19	13	56	10	13	56	29	15	69
54	690406	No	No	No	23	13	56	25	17	81	12	16	75	32	16	75
55	992859	No	No	No	25	14	63	23	15	69	11	15	69	30	15	69
56	1107637	No	No	No	19	11	44	21	14	63	9	12	50	29	15	69
57	1105383	No	No	No	26	15	69	25	17	81	11	15	69	30	15	69
58	110186	No	No	No	21	12	50	15	10	38	10	13	56	27	14	63
59	1095856	No	No	No	25	14	63	24	16	75	11	15	69	31	16	75
60	1105963	No	No	No	19	11	44	13	9	31	8	11	44	31	16	75
61	1118450	No	No	No	24	14	63	22	15	69	12	16	75	32	16	75
62	1118224	No	Yes	No	20	11	44	22	15	69	12	16	75	31	16	75
63	1119944	No	No	No	22	13	56	22	15	69	12	16	75	29	15	69
64	1119545	No	No	No	26	15	69	22	15	69	12	16	75	30	15	69
65	1121826	No	Yes	No	23	13	56	18	12	50	10	13	56	30	15	69
66	1122342	No	No	No	24	14	63	22	15	69	12	16	75	30	15	69
67	1122381	No	Yes	No	24	14	63	23	15	69	10	13	56	29	15	69
68	1123817	No	No	No	18	10	38	21	14	63	12	16	75	31	16	75
69	112494	No	Yes	No	18	10	38	19	13	56	10	13	56	30	15	69
70	1113566	No	No	No	16	9	31	18	12	50	9	12	50	31	16	75
71	403491	No	No	No	25	14	63	24	16	75	12	16	75	31	16	75
72	940891	No	Yes	No	26	15	69	22	15	69	11	15	69	33	17	81
73	198646	No	Yes	No	18	10	38	17	11	44	10	13	56	30	15	69
74	1086089	No	No	No	24	14	63	25	17	81	12	16	75	32	16	75
75	454350	No	No	No	24	14	63	24	16	75	11	15	69	31	16	75
76	1126468	No	No	No	26	15	69	23	15	69	12	16	75	30	15	69
77	1123817	No	No	No	18	10	38	15	10	38	8	11	44	25	13	56
78	1127172	No	Yes	No	26	15	69	24	16	75	12	16	75	33	17	81
79	939071	No	No	No	24	14	63	23	15	69	11	15	69	32	16	75
80	1010770	No	No	No	18	10	38	18	12	50	10	13	56	27	14	63
81	1010754	No	Yes	No	23	13	56	25	17	81	11	15	69	32	16	75
82	502018	No	No	No	24	14	63	23	15	69	10	13	56	29	15	69
83	1126468	No	No	No	20	11	44	15	10	38	10	13	56	30	15	69
84	985106	No	No	No	21	12	50	23	15	69	12	16	75	32	16	75
85	591822	No	Yes	No	22	13	56	16	11	44	10	13	56	29	15	69
86	1115618	No	No	No	24	14	63	19	13	56	10	13	56	27	14	63
87	1127812	No	No	No	21	12	50	22	15	69	12	16	75	27	14	63
88	118279	No	No	No	16	9	31	13	9	31	8	11	44	31	16	75
89	1118912	No	No	No	25	14	63	22	15	69	12	16	75	34	17	81
90	1131712	No	No	No	18	10	38	13	9	31	8	11	44	28	14	63
91	1129445	No	Yes	No	23	13	56	16	11	44	10	13	56	32	16	75
92	1129991	No	No	No	26	15	69	24	16	75	12	16	75	32	16	75
93	1130893	No	No	No	25	14	63	25	17	81	11	15	69	32	16	75
94	1131711	No	No	No	24	14	63	22	15	69	11	15	69	32	16	75
95	728343	No	No	No	23	13	56	24	16	75	12	16	75	31	16	75
96	1129523	No	No	No	19	11	44	14	9	31	8	11	44	29	15	69
97	208655	No	No	No	25	14	63	23	15	69	12	16	75	30	15	69
98	453775	No	No	No	24	14	63	23	15	69	12	16	75	31	16	75
99	1133200	No	No	No	24	14	63	23	15	69	12	16	75	30	15	69
100	1132363	No	No	No	23	13	56	23	15	69	13	17	81	31	16	75

S.NO.	MRD NO.	NAME INITIALS	AGE Group	AGE (YEARS)	PERIOD OF GESTATION (WEEKS)	EDUCATION	OCCUPATION	HUSBAND'S EDUCATION	HUSBAND OCCUPATION	LOCALITY	FAMILY TYPE	INFERTILITY	BAD OBSTETRICAL HISTORY	DOMESTIC VIOLENCE	MARITAL DISHARMONY	PROFESSIONAL INSTABILITY	ECONOMIC INSTABILITY	DIABETES MELLITUS	HYPERTENSION
1	844056	KS	B	28	37.6	E	D	E	C	B	C	No	No	No	No	No	No	No	No
2	929314	SCG	A	22	39.3	E	D	E	C	B	A	No	No	No	No	No	No	No	No
3	947554	PS	C	33	38.3	E	C	E	C	B	B	No	No	No	No	No	No	No	No
4	85561	SK	C	31	37	E	C	D	C	B	C	No	No	No	No	No	No	No	No
5	958424	GK	C	34	37.2	D	D	E	A	A	C	No	No	No	No	No	No	No	No
6	706374	MK	D	36	37	E	D	E	A	A	C	No	No	No	No	No	No	No	No
7	804756	HK	C	32	37	E	C	E	C	B	A	No	No	No	No	No	No	No	No
8	884820	S	B	27	37.3	C	D	C	C	A	A	No	No	No	No	No	No	No	No
9	878506	NA	B	27	40	E	C	E	C	B	B	No	No	No	No	No	No	No	No
10	294052	RK	B	28	39.3	C	D	C	B	A	C	No	No	No	No	No	No	No	No
11	961962	AM	B	27	38.3	D	D	D	C	B	B	No	No	No	No	No	No	No	No
12	963075	PK	B	27	38	C	D	C	B	A	A	No	No	No	No	No	No	No	No
13	216950	NA	B	29	37	D	D	D	B	B	A	No	No	No	No	No	No	No	No
14	963027	VJ	A	23	38.2	A	D	D	B	B	A	No	No	No	No	No	No	No	No
15	963891	AK	C	30	37.3	A	D	B	B	A	A	No	No	No	No	No	No	No	No
16	93265	KS	A	22	38.1	A	D	A	B	B	B	No	No	No	No	No	No	No	No
17	603871	MS	B	26	37.2	C	B	C	B	B	A	No	No	No	No	No	No	No	No
18	965446	MJ	C	31	39.4	D	C	E	C	B	B	No	No	No	No	No	No	No	No
19	989198	SK	C	32	38.3	E	C	E	C	B	B	No	No	No	No	No	No	No	No
20	988743	AR	B	27	38	B	D	C	B	A	C	No	No	No	No	No	No	No	No
21	989647	SK	B	26	38	A	D	A	A	A	C	No	No	No	No	No	No	No	No
22	996356	RK	A	22	37	A	D	A	B	B	B	No	No	No	No	No	No	No	No
23	989715	SP	D	37	37	E	C	E	C	B	A	No	No	No	No	No	No	No	No
24	994293	SG	C	31	37.2	D	D	D	B	A	A	No	No	No	No	No	No	No	No
25	991112	RK	C	34	37.6	D	D	D	B	A	B	No	No	No	No	No	No	No	No
26	989442	NA	B	27	37.6	A	D	B	B	B	B	No	No	No	No	No	No	No	No
27	995558	S	D	36	37.2	A	D	A	A	A	A	No	No	No	No	No	No	No	No
28	799910	VK	B	26	38	A	D	A	B	A	C	No	No	No	No	No	No	No	No
29	999414	RK	C	32	38	D	D	E	A	B	A	No	No	No	No	No	No	No	No
30	938875	SK	B	27	38.3	D	D	D	B	B	B	No	No	No	No	No	No	No	No
31	1025722	NB	B	28	38.3	E	C	E	C	B	A	No	No	No	No	No	No	No	No
32	1033534	RR	B	26	39.1	A	D	C	B	B	A	No	No	No	No	No	No	No	No
33	503155	S	A	22	39.1	A	D	B	B	B	B	No	No	No	No	No	No	No	No
34	1036784	RB	C	33	39.2	B	D	C	A	A	B	No	No	No	No	No	No	No	No
35	964019	MR	B	26	37.4	A	D	B	B	B	B	No	No	No	No	No	No	No	No
36	1025936	AK	B	27	38.3	B	D	B	B	B	B	No	No	No	No	No	No	No	No
37	1047768	ND	B	28	38.4	A	D	D	B	A	B	No	No	No	No	No	No	No	No
38	1013024	G	B	27	37.4	E	C	E	C	B	A	No	No	No	No	No	No	No	No
39	937569	PK	D	36	38.2	E	C	E	C	B	A	No	No	No	No	No	No	No	No
40	1029014	U	D	37	37.3	D	D	D	B	B	B	No	No	No	No	No	No	No	No
41	1041554	KK	C	34	38.2	A	D	B	B	A	C	No	No	No	No	No	No	No	No
42	793206	RK	C	32	39	B	D	C	B	A	C	No	No	No	No	No	No	No	No
43	1048717	MK	B	26	38.2	B	D	C	A	B	B	No	No	No	No	No	No	No	No
44	1050956	A	C	32	38	E	D	E	C	B	B	No	No	No	No	No	No	No	No
45	1047813	S	A	22	37.1	D	C	E	C	B	A	No	No	No	No	No	No	No	No
46	975025	SR	B	27	38	D	D	D	B	A	C	No	No	No	No	No	No	No	No
47	1057216	SR	C	32	37	B	D	B	B	B	B	No	No	No	No	No	No	No	No
48	1068842	MK	C	34	38.6	A	D	A	A	B	C	No	No	No	No	No	No	No	No
49	225344	KK	D	38	37.1	A	D	B	A	B	B	No	No	No	No	No	No	No	No
50	980056	AK	B	28	37.1	E	C	E	C	B	A	No	No	No	No	No	No	No	No

S.NO.	MRD NO.	SYSTOLIC BP (mmHg)	DIASTOLIC BP (mmHg)	ORAL MEDICATIONS	INTRAVENOUS MEDICATIONS	PSYCHIATRIC COMORBIDITY	MINI MAJOR DEPRESSIVE DISORDER/RECURRENT DEPRESSIVE DISORDER	DYSTHYMIA	SUICIDALITY	MANIC/ HYPOMANIC EPISODE	PANIC ATTACK/ DISORDER	AGORAPHOBIA	SOCIAL PHOBIA/SOCIAL ANXIETY DISORDER	OBSESSIVE COMPULSIVE DISORDER	POSTTRAUMATIC STRESS DISORDER	ALCOHOL ABUSE/DEPENDENCE	SUBSTANCE ABUSE/DEPENDENCE (NON ALCOHOL)	PSYCHOTIC DISORDERS/ MOOD DISORDER WITH PSYCHOTIC FEATURES
1	844056	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
2	929314	110	66	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
3	947554	110	70	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
4	85561	120	80	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
5	958424	116	80	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
6	706374	124	80	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No
7	804756	110	70	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
8	884820	130	80	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
9	878506	124	80	No	Yes	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No
10	294052	110	70	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
11	961962	100	80	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
12	963075	130	80	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No
13	216950	130	90	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
14	963027	120	70	Yes	No	Yes	No	No	No	No	No	Yes	No	No	No	No	No	No
15	963891	110	70	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
16	93265	108	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
17	603871	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
18	965446	116	90	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
19	989198	110	70	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
20	988743	126	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
21	989647	114	80	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
22	996356	120	80	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes
23	989715	126	80	No	Yes	Yes	No	No	No	No	Yes	No	No	No	No	No	No	No
24	994293	116	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
25	991112	106	70	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
26	989442	116	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
27	995558	110	70	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
28	799910	116	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
29	999414	114	70	No	Yes	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No
30	938875	110	70	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
31	1025722	126	80	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
32	1033534	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
33	503155	110	70	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
34	1036784	124	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
35	964019	120	80	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
36	1025936	110	70	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
37	1047768	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
38	1013024	116	80	No	Yes	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No
39	937569	126	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
40	1029014	120	80	No	Yes	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No
41	1041554	110	70	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
42	793206	124	80	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
43	1048717	110	70	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No
44	1050956	120	70	No	Yes	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No
45	1047813	116	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
46	975025	130	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
47	1057216	126	70	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
48	1068842	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
49	225344	126	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
50	980056	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No

S.NO.	MRD NO.	ANOREXIA NERVOSA	BULIMIA NERVOSA	GENERALISED ANXIETY DISORDER	ANTISOCIAL PERSONALITY DISORDER	WHO- BREF DOMAIN 1 RAW SCORE	DOMAIN 1 TRANSFORMED SCORE (4-20)	DOMAIN 1 TRANSFORMED SCORE (0-100)	DOMAIN 2 RAW SCORE	DOMAIN 2 TRANSFORMED SCORE(4-20)	DOMAIN 2 TRANSFORMED SCORE (0-100)	DOMAIN 3 RAW SCORE	DOMAIN 3 TRANSFORMED SCORE(4-20)	DOMAIN 3 TRANSFORMED SCORE (0-100)	DOMAIN 4 RAW SCORE	DOMAIN 4 TRANSFORMED SCORE (4-20)	DOMAIN 4 TRANSFORMED SCORE (0-100)
1	844056	No	No	No	No	26	15	69	21	14	63	11	15	69	24	12	50
2	929314	No	No	No	No	24	14	63	18	12	50	13	17	81	37	19	94
3	947554	No	No	No	No	25	14	63	19	13	56	11	15	69	29	15	69
4	85561	No	No	No	No	27	15	69	22	15	69	12	16	75	30	15	69
5	958424	No	No	No	No	27	15	69	23	15	69	14	19	94	36	18	88
6	706374	No	No	Yes	No	19	11	44	18	12	50	11	15	69	28	14	63
7	804756	No	No	No	No	27	15	69	25	17	81	12	16	75	31	16	75
8	884820	No	No	No	No	21	12	50	17	11	44	11	15	69	28	14	63
9	878506	No	No	No	No	30	17	81	26	17	81	13	17	81	32	16	75
10	294052	No	No	No	No	29	17	81	25	17	81	12	16	75	34	17	81
11	961962	No	No	No	No	27	15	69	25	17	81	13	17	81	34	17	81
12	963075	No	No	Yes	No	26	15	69	21	14	63	12	16	75	31	16	75
13	216950	No	No	No	No	27	15	69	22	15	69	12	16	75	31	16	75
14	963027	No	No	No	No	28	16	75	22	15	69	12	16	75	31	16	75
15	963891	No	No	No	No	27	15	69	22	15	69	12	16	75	28	14	63
16	93265	No	No	No	No	26	15	69	23	15	69	13	17	81	25	13	56
17	603871	No	No	No	No	25	14	63	24	16	75	12	16	75	29	15	69
18	965446	No	No	No	No	24	14	63	22	15	69	12	16	75	30	15	69
19	989198	Yes	No	No	No	17	10	38	18	12	50	12	16	75	30	15	69
20	988743	No	No	No	No	29	17	81	24	16	75	13	17	81	30	15	69
21	989647	No	No	No	No	29	17	81	26	17	81	12	16	75	31	16	75
22	996356	No	No	No	No	20	11	44	20	13	56	12	16	75	28	14	63
23	989715	No	No	No	No	26	15	69	21	14	63	12	16	75	31	16	75
24	994293	No	No	No	No	23	13	56	21	14	63	12	16	75	30	15	69
25	991112	No	No	No	No	22	13	56	22	15	69	11	15	69	26	13	56
26	989442	No	No	No	No	24	14	63	21	14	63	10	13	56	30	15	69
27	995558	No	No	No	No	18	10	38	19	13	56	11	15	69	31	16	75
28	799910	No	No	No	No	30	17	81	24	16	75	13	17	81	30	16	75
29	999414	No	No	No	No	18	10	38	21	14	63	12	16	75	31	16	75
30	938875	No	No	No	No	19	11	44	18	12	50	12	16	75	29	15	69
31	1025722	No	No	No	No	20	11	44	20	13	56	12	16	75	31	16	75
32	1033534	No	No	No	No	23	13	56	25	17	81	11	15	69	30	15	69
33	503155	No	No	No	No	16	9	31	17	11	44	11	15	69	29	15	69
34	1036784	No	No	No	No	21	12	50	21	14	63	11	15	69	27	14	63
35	964019	No	No	No	No	25	14	63	25	17	81	12	16	75	31	16	75
36	1025936	No	No	Yes	No	22	13	56	17	11	44	12	16	75	30	15	69
37	1047768	No	No	No	No	21	12	50	23	15	69	12	16	75	24	12	50
38	1013024	No	No	No	No	22	13	56	17	11	44	12	16	75	28	14	63
39	937569	No	No	No	No	23	13	56	22	15	69	10	13	56	30	15	69
40	1029014	No	No	No	No	20	11	44	16	11	44	10	3	56	29	15	69
41	1041554	No	No	No	No	16	9	31	13	9	31	8	11	44	28	14	63
42	793206	No	No	No	No	25	14	63	21	14	63	12	16	75	29	15	69
43	1048717	No	No	No	Yes	25	14	63	21	14	63	8	11	44	27	14	63
44	1050956	No	No	No	No	16	9	31	13	9	31	6	8	25	23	12	50
45	1047813	No	No	No	No	25	14	63	23	15	69	12	16	75	31	16	75
46	975025	No	No	No	No	23	13	56	23	15	69	12	16	75	29	15	69
47	1057216	No	No	No	No	21	12	50	17	11	44	9	12	50	25	13	56
48	1068842	No	No	No	No	23	13	56	23	15	69	12	16	75	29	15	69
49	225344	No	No	No	No	23	13	56	25	17	81	11	15	69	31	16	75
50	980056	No	No	No	No	20	11	44	25	17	81	12	16	75	32	16	75

S.NO.	MRD NO.	NAME INITIALS	AGE Group	AGE (YEARS)	PERIOD OF GESTATION (WEEKS)	EDUCATION	OCCUPATION	HUSBAND'S EDUCATION	HUSBAND OCCUPATION	LOCALITY	FAMILY TYPE	INFERTILITY	BAD OBSTETRICAL HISTORY	DOMESTIC VIOLENCE	MARITAL DISHARMONY	PROFESSIONAL INSTABILITY	ECONOMIC INSTABILITY	DIABETES MELLITUS	HYPERTENSION
51	1074703	E	C	32	37.1	E	C	E	C	B	B	No	No	No	No	No	No	No	No
52	1014696	HJ	B	27	37.2	D	D	E	C	B	A	No	No	No	No	No	No	No	No
53	1080531	M	B	28	39	C	D	C	B	B	B	No	No	No	No	No	No	No	No
54	1064377	LK	D	36	39.2	A	D	B	A	A	C	No	No	No	No	No	No	No	No
55	1086944	DJ	C	32	39.1	B	D	A	A	B	B	No	No	No	No	No	No	No	No
56	305799	RK	B	27	37	A	D	B	B	B	C	No	No	No	No	No	No	No	No
57	4532	GK	C	33	38.2	D	C	C	A	B	A	No	No	No	No	No	No	No	No
58	910738	N	A	24	38.2	E	C	E	C	B	B	No	No	No	No	No	No	No	No
59	1110016	N	A	23	37.2	D	D	D	B	B	A	No	No	No	No	No	No	No	No
60	10800777	PK	B	28	39	E	D	D	A	B	C	No	No	No	No	No	No	No	No
61	1103434	JG	B	28	37.2	B	D	B	B	B	A	No	No	No	No	No	No	No	No
62	1102542	SKG	B	26	39.2	A	D	A	B	A	C	No	No	No	No	No	No	No	No
63	96570	RD	B	28	39.3	D	C	E	C	B	B	No	No	No	No	No	No	No	No
64	969361	RK	B	26	37.3	D	D	E	C	B	B	No	No	No	No	No	No	No	No
65	1098167	VG	B	28	38.2	E	C	E	B	B	C	No	No	No	No	No	No	No	No
66	745667	M	A	24	37.4	A	D	B	B	B	A	No	No	No	No	No	No	No	No
67	1119271	K	B	26	38.2	A	D	A	A	A	C	No	No	No	No	No	No	No	No
68	8289	PS	B	26	38.3	E	A	E	A	B	A	No	No	No	No	No	No	No	No
69	926148	EK	B	29	38.3	D	B	D	A	B	B	No	No	No	No	No	No	No	No
70	149351	MV	D	36	37.2	E	C	E	A	B	A	No	No	No	No	No	No	No	No
71	1124104	KK	A	24	38.2	A	D	B	A	A	B	No	No	No	No	No	No	No	No
72	229797	SR	B	28	38.3	B	D	B	A	A	C	No	No	No	No	No	No	No	No
73	516096	PK	C	32	37.5	B	A	A	A	B	C	No	No	No	No	No	No	No	No
74	1031360	PS	B	27	37.5	E	C	E	D	B	A	No	No	No	No	No	No	No	No
75	1025722	NB	B	28	38.3	E	B	E	C	B	B	No	No	No	No	No	No	No	No
76	1033534	RR	B	26	39	E	D	E	A	B	B	No	No	No	No	No	No	No	No
77	503155	S	A	22	39.1	A	D	B	A	B	A	No	No	No	No	No	No	No	No
78	905939	S	A	21	39.3	B	D	B	A	B	C	No	No	No	No	No	No	No	No
79	1096639	HK	A	21	40.1	A	D	B	A	A	C	No	No	No	No	No	No	No	No
80	1098167	VG	B	28	38.3	D	C	E	C	B	B	No	No	No	No	No	No	No	No
81	875594	A	B	32	39.1	E	D	E	C	B	C	No	No	No	No	No	No	No	No
82	1029444	A	A	24	38.2	D	B	C	A	B	A	No	No	No	No	No	No	No	No
83	1091784	NK	D	35	37.2	A	D	B	A	A	C	No	No	No	No	No	No	No	No
84	1097542	BK	B	26	37.3	B	D	A	A	B	C	No	No	No	No	No	No	No	No
85	1098317	GK	C	31	39.2	B	D	B	A	A	C	No	No	No	No	No	No	No	No
86	1092371	DK	B	28	37.2	E	C	E	A	B	B	No	No	No	No	No	No	No	No
87	778167	RS	C	31	39.2	E	D	E	C	B	A	No	No	No	No	No	No	No	No
88	1087572	S	B	28	37.5	D	D	D	A	B	B	No	No	No	No	No	No	No	No
89	1052483	RD	B	29	38.2	A	D	B	B	B	B	No	No	No	No	No	No	No	No
90	1108544	HK	B	27	39.2	B	A	A	B	A	C	No	No	No	No	No	No	No	No
91	1109457	IK	D	35	38.2	B	D	A	B	B	A	No	No	No	No	No	No	No	No
92	1110089	NK	D	37	38.5	D	D	D	B	B	B	No	No	No	No	No	No	No	No
93	984131	T	A	23	39.7	E	C	E	A	B	A	No	No	No	No	No	No	No	No
94	1111697	D	A	24	39.2	D	A	E	B	B	B	No	No	No	No	No	No	No	No
95	1101722	KK	C	34	37.3	B	D	A	B	B	A	No	No	No	No	No	No	No	No
96	1111082	RK	A	21	39.5	B	B	A	A	B	B	No	No	No	No	No	No	No	No
97	886630	V	B	28	38.1	D	A	E	C	B	B	No	No	No	No	No	No	No	No
98	809838	AK	C	32	38.3	C	D	D	A	A	B	No	No	No	No	No	No	No	No
99	1132432	KK	B	25	37.2	B	D	A	A	A	C	No	No	No	No	No	No	No	No
100	987897	PS	B	29	38.3	B	D	A	B	B	B	No	No	No	No	No	No	No	No

S.NO.	MRD NO.	SYSTOLIC BP (mmHg)	DIASTOLIC BP (mmHg)	ORAL MEDICATIONS	INTRAVENOUS MEDICATIONS	PSYCHIATRIC COMORBIDITY	MINI MAJOR DEPRESSIVE DISORDER/RECURRENT DEPRESSIVE DISORDER	DYSTHYMIA	SUICIDALITY	MANIC/ HYPOMANIC EPISODE	PANIC ATTACK/ DISORDER	AGORAPHOBIA	SOCIAL PHOBIA/SOCIAL ANXIETY DISORDER	OBSESSIVE COMPULSIVE DISORDER	POSTTRAUMATIC STRESS DISORDER	ALCOHOL ABUSE/DEPENDENCE	SUBSTANCE ABUSE/DEPENDENCE (NON ALCOHOL)	PSYCHOTIC DISORDERS/ MOOD DISORDER WITH PSYCHOTIC FEATURES
51	1074703	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
52	1014696	120	80	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No
53	1080531	130	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
54	1064377	126	80	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
55	1086944	110	70	No	Yes	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No
56	305799	116	80	No	Yes	Yes	No	No	No	No	Yes	No	No	No	No	No	No	No
57	4532	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
58	910738	120	30	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
59	1110016	110	70	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
60	10800777	100	60	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
61	1103434	110	70	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes
62	1102542	116	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
63	96570	114	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
64	969361	112	70	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
65	1098167	126	80	No	Yes	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No
66	745667	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
67	1119271	116	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
68	8289	120	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
69	926148	130	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
70	149351	130	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
71	1124104	110	70	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
72	229797	130	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
73	516096	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
74	1031360	116	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
75	1025722	112	80	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
76	1033534	110	70	No	Yes	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No
77	503155	112	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
78	905939	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
79	1096639	120	80	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
80	1098167	130	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
81	875594	116	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
82	1029444	110	70	No	Yes	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No
83	1091784	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
84	1097542	110	80	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
85	1098317	126	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
86	1092371	110	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
87	778167	126	90	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
88	1087572	130	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
89	1052483	120	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
90	1108544	116	80	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
91	1109457	116	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
92	1110089	110	70	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
93	984131	136	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
94	1111697	116	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
95	1101722	126	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
96	1111082	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
97	886630	120	80	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
98	809838	130	80	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
99	1132432	130	80	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
100	987897	110	70	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No

S.NO.	MRD NO.	ANOREXIA NERVOSA	BULIMIA NERVOSA	GENERALISED ANXIETY DISORDER	ANTISOCIAL PERSONALITY DISORDER	WHO- BREF DOMAIN 1 RAW SCORE	DOMAIN 1 TRANSFORMED SCORE (4-20)	DOMAIN 1 TRANSFORMED SCORE (0-100)	DOMAIN 2 RAW SCORE	DOMAIN 2 TRANSFORMED SCORE(4-20)	DOMAIN 2 TRANSFORMED SCORE (0-100)	DOMAIN 3 RAW SCORE	DOMAIN 3 TRANSFORMED SCORE(4-20)	DOMAIN 3 TRANSFORMED SCORE (0-100)	DOMAIN 4 RAW SCORE	DOMAIN 4 TRANSFORMED SCORE (4-20)	DOMAIN 4 TRANSFORMED SCORE (0-100)
51	1074703	No	No	No	No	27	15	69	22	15	69	11	15	69	28	14	63
52	1014696	No	No	Yes	No	24	14	63	21	14	63	11	15	69	30	15	69
53	1080531	No	No	No	No	25	14	63	24	16	75	12	16	75	29	15	69
54	1064377	No	No	No	No	16	9	31	16	11	44	9	12	50	30	15	69
55	1086944	No	No	No	No	23	13	56	21	14	63	11	15	69	30	15	69
56	305799	No	No	No	No	18	10	38	20	13	56	11	15	69	30	15	69
57	4532	No	No	No	No	27	15	69	24	16	75	12	16	75	32	16	75
58	910738	No	No	No	No	20	11	44	17	11	44	8	11	44	31	16	75
59	1110016	No	No	Yes	No	20	11	44	17	11	44	9	12	50	28	14	63
60	10800777	No	No	No	No	24	14	63	25	17	81	10	13	56	30	15	69
61	1103434	No	No	No	No	18	10	38	15	10	38	9	12	50	29	15	69
62	1102542	No	No	No	No	23	13	56	21	14	63	12	16	75	31	16	75
63	96570	No	No	No	No	22	13	56	24	16	75	12	16	75	30	15	69
64	969361	No	No	No	No	20	11	44	19	13	56	9	12	50	30	15	69
65	1098167	No	No	No	No	24	14	63	24	16	75	12	16	75	30	15	69
66	745667	No	No	No	No	23	13	56	24	16	75	12	16	75	30	15	69
67	1119271	No	No	No	No	28	16	75	23	15	69	12	16	75	30	15	69
68	8289	No	No	No	No	26	15	69	23	15	69	11	15	69	29	15	69
69	926148	No	No	No	No	19	11	44	23	15	69	10	13	56	30	15	69
70	149351	No	No	No	No	22	13	56	24	16	75	12	16	75	32	16	75
71	1124104	No	No	No	No	21	12	50	19	13	56	10	13	56	27	14	63
72	229797	No	No	No	No	25	14	63	22	15	69	12	16	75	30	15	69
73	516096	No	No	No	No	26	15	69	21	14	63	12	16	75	32	16	75
74	1031360	No	No	No	No	28	16	75	21	14	63	11	15	69	30	15	69
75	1025722	No	No	Yes	No	19	11	44	19	13	56	9	12	50	29	15	69
76	1033534	No	No	No	No	26	15	69	21	14	63	12	16	75	30	15	69
77	503155	No	No	No	No	27	15	69	22	15	69	12	16	75	31	16	75
78	905939	No	No	No	No	27	15	69	23	15	69	12	16	75	32	16	75
79	1096639	No	No	No	No	23	13	56	20	13	56	11	15	69	29	15	69
80	1098167	No	No	No	No	27	15	69	23	15	69	11	15	69	31	16	75
81	875594	No	No	No	No	28	16	75	23	15	69	12	16	75	28	14	63
82	1029444	No	No	No	No	24	14	63	18	12	50	9	12	50	28	14	63
83	1091784	No	No	No	No	25	14	63	22	15	69	12	16	75	32	16	75
84	1097542	No	No	Yes	No	20	11	44	17	11	44	10	13	56	32	16	75
85	1098317	No	No	No	No	27	15	69	25	17	81	12	16	75	31	16	75
86	1092371	No	No	No	No	29	17	81	25	17	81	11	15	69	34	17	81
87	778167	No	No	Yes	No	21	12	50	17	11	44	10	13	56	31	16	75
88	1087572	No	No	No	No	26	15	69	23	15	69	12	16	75	32	16	75
89	1052483	No	No	No	No	28	16	75	23	15	69	12	16	75	30	15	69
90	1108544	No	No	No	No	24	14	63	25	17	81	10	13	56	30	15	69
91	1109457	No	No	No	No	27	15	69	24	16	75	10	13	56	30	15	69
92	1110089	No	No	No	No	23	13	56	16	11	44	8	11	44	30	15	69
93	984131	No	No	No	No	25	14	63	24	16	75	12	16	75	31	16	75
94	1111697	No	No	No	No	28	16	75	23	15	69	12	16	75	30	15	69
95	1101722	No	No	No	No	25	14	63	22	15	69	12	16	75	32	16	75
96	1111082	No	No	No	No	24	14	63	25	17	81	10	13	56	30	15	69
97	886630	No	No	Yes	No	24	14	63	17	11	44	10	13	56	30	15	69
98	809838	No	No	No	No	28	16	75	23	15	69	12	16	75	31	16	75
99	1132432	No	No	No	No	27	15	69	23	15	69	12	16	75	30	15	69
100	987897	No	No	No	No	27	15	69	21	14	63	11	15	69	24	12	50

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No. BFUHS/2K21p-TH/ 5043

Date 20/1/2021

The Principal,
DMC,Ludhiana.

Subject: **Approval of Plan of Thesis.**

This is to inform you that the Faculty of Medical Sciences in its meeting held on 22.01.2021 has approved the plan of thesis of **Dr. Ruchika**, a student of your college for **MD Psychiatry** along with the names of Supervisor/Co-Supervisor as under:-

Topic Plan of Thesis

A study of quality of life and psychiatric comorbidities in females with hypertensive disorders of pregnancy

Supervisor
Dr. Rupesh Chaudhary
Prof.,
Dept. of Psychiatry,
DMCH, Ludhiana.

Co-Supervisor
Dr. Shweta Gupta
Prof.,
Dept. of Obst. & Gynae.,
DMCH, Ludhiana.

Dr. Narender Pal Jain
Prof.,
Dept. of Medicine,

The student has to submit the three copies of thesis (along with PDF format) , to the Controller of Examinations, BFUHS, Faridkot, at least six months before the commencement of theory examination, if he/she is otherwise eligible to take the examination. He /She must directed to attach a photocopy of this letter with the forwarding letter while submitting thesis to the University along with the letter of approval of University for change of supervisor/Co-Supervisor, change of topic,(if any).

Dr. S P Singh MS(Oph)
Controller of Examinations

Note :

1. ***If any discrepancy found regarding topic of thesis or Supervisor/Co-Supervisor, inform undersigned within one month after issue of this letter.***
2. *The student may submit the thesis as per the schedule already conveyed i.e for May/June examination 30th Nov of the preceding the year of examination and for Nov/Dec examinations 31st May of the year of examination.*

A STUDY OF QUALITY OF LIFE AND PSYCHIATRIC COMORBIDITIES IN FEMALES WITH HYPERTENSIVE DISORDERS OF PREGNANCY

THESIS PROPOSAL

FOR APPROVAL OF SUBJECT OF THESIS TO BE SUBMITTED

IN PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

Doctor of Medicine
in

PSYCHIATRY

OF THE

BABA FARID UNIVERSITY OF HEALTH SCIENCES
FARIDKOT

NOVEMBER, 2019

DR. RUCHIKA

DEPARTMENT OF PSYCHIATRY
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ABSTRACT OF PLAN OF THESIS

Title	A STUDY OF QUALITY OF LIFE AND PSYCHIATRIC COMORBIDITIES IN FEMALES WITH HYPERTENSIVE DISORDERS OF PREGNANCY
For the degree of	M.D PSYCHIATRY
Name of the candidate	Dr Ruchika
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Co-supervisor(s)	Dr. Shweta Gupta, Professor, Department of Obstetrics and Gynaecology, DMCH Dr. Narender Pal Jain, Professor, Department of Medicine
Institution	Dayanand Medical College & Hospital, Ludhiana
University	Baba Farid University of Health Sciences, Faridkot

Introduction: Hypertensive disorders of pregnancy is a group of diseases that includes gestational hypertension, chronic hypertension and preeclampsia with or without severe features. Arterial hypertension during pregnancy is defined by at least two blood pressure values ≥140 mmHg systolic and/or ≥90 mmHg diastolic. Hypertensive disorders not only affect the physical health of pregnant females but may also have deleterious effects on their mental health by predisposing them to anxiety, depression and various other psychiatric comorbidities like psychosis, eating disorders, obsessive compulsive disorder and others.

Aim of Study: To study the quality of life and frequency of psychiatric comorbidities in females with hypertensive disorders of pregnancy.

Materials & methods: The study would include 100 pregnant females in age group of 20-40 years with spontaneous conception presenting with hypertensive disorders of pregnancy (cases) and 100 antenatal women with spontaneous conception at term (37-41 weeks of pregnancy) with no associated comorbidity and no obvious stressor (controls) presenting to Dayanand Medical College & Hospital, Ludhiana over a period of one year.

Keywords: Hypertensive disorders of pregnancy, anxiety, depression, psychiatric comorbidities, pregnant females, quality of life.

(Signature) Candidate	(Signature) Co-supervisor	(Signature) Co-supervisor	(Signature) Supervisor	(Signature) Principal
Dr. RUCHIKA	Dr. SHWETA GUPTA	Dr. NARENDER PAL JAIN	Dr. RUPESH CHAUDHARY	Dr. SANDEEP PURI

CERTIFICATE OF FACILITIES AVAILABLE

This is to certify that the facilities for work on the subject of thesis titled **"A STUDY OF QUALITY OF LIFE AND PSYCHIATRIC COMORBIDITIES IN FEMALES WITH HYPERTENSIVE DISORDERS OF PREGNANCY"** exist in the Department of Psychiatry, DMC&H, Ludhiana and will be provided to the candidate. We will see that the data being included in the thesis is genuine and is collected by the candidate himself under our supervision and guidance.

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Department	Psychiatry
Topic of Thesis	A study of quality of life and psychiatric comorbidities in females with hypertensive disorders of pregnancy
Likely date of appearing in PG examination	May – June 2022
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4	DATE OF ADMISSION OF COURSE	11.05.2019
5	TITLE OF THE TOPIC	"A STUDY OF QUALITY OF LIFE AND PSYCHIATRIC COMORBIDITIES IN FEMALES WITH HYPERTENSIVE DISORDERS OF PREGNANCY"

6. BRIEF RESUME OF THE INTENDED WORK

6.1 NEED FOR THE STUDY

Hypertensive disorders of pregnancy is a group of diseases that includes gestational hypertension, chronic hypertension and preeclampsia with or without severe features. Arterial hypertension during pregnancy is defined by at least two blood pressure values ≥140 mmHg systolic and/or ≥90 mmHg diastolic.[1] Hypertension, complicating 5% to 7% of all pregnancies, is a leading cause of maternal and fetal morbidity, particularly when the elevated blood pressure (BP) is due to preeclampsia, either alone (pure) or "superimposed" on chronic vascular disease.[2] Mood and anxiety disorders are common, debilitating psychiatric illnesses that disproportionally affect women, particularly those of childbearing age.[3]

Traditionally, pregnancy is considered a period of wellbeing and happiness, and was once thought to protect the women from anxiety and depression. However, 20% of women experience moderate depression during pregnancy and almost 13% suffer from major depressive disorder during the first year postpartum.[4] Elevated anxiety levels are found in one out of seven women.[4] During pregnancy and the perinatal period, women are more likely to be exposed to stressful situations, such as maternal complications, preterm delivery, fetal distress, emergency cesarean section, and maternal or neonatal admission to intensive care.

Hypertensive disorders not only affect the physical health of pregnant females but may also have deleterious effects on their mental health by predisposing them to anxiety, depression and various other psychiatric comorbidities like psychosis, eating disorders, obsessive compulsive disorder and others. Several investigators have identified depression, anxiety, and other psychopathologies during pregnancy as risk factors for adverse fetal and neonatal outcomes including preterm delivery[3,5],fetal growth restriction[3,6], and low Apgar scores.[3,7] Prevention and timely recognition of these psychiatric comorbidities

can reduce treatment duration and costs which otherwise can persist for years and can adversely affect infants .

Extreme stressful, life threatening situations including pre eclampsia and other hypertensive disorders of pregnancy can induce long lasting and disabling anxiety-related complaints, labeled posttraumatic stress disorder (PTSD). Symptoms of PTSD consist of re-experiences of the stressful situation, avoidance of reminders of that situation and a persistent hyper-aroused state. The diagnosis of PTSD according to the DSM-IV, additionally requires that the threat elicits a subjective response of intense fear, horror or helplessness; that the symptoms persist for at least a month; and that the symptoms impair daily life functioning. PTSD commonly co-occurs with other psychiatric disorders, particularly major depressive disorder.[8]

Currently, the identification of anxiety, depression and other psychiatric morbidities like mania, hypomania, panic disorder, agoraphobia, obsessive compulsive disorder, psychotic disorders, eating disorders like anorexia nervosa, bulimia nervosa, substance dependence(alcohol or non alcohol), generalized anxiety disorder and antisocial personality disorder during pregnancy particularly which is associated with hypertensive disorders is the basis of this study. There is paucity of the available data in Indian population regarding prevalence of psychiatric co-morbidities in females with hypertensive disorders of pregnancy and their subsequent impact on the quality of life in Indian population. Only a few studies till date in an Indian set-up discuss the interconnection, correlations and association of psychiatric diagnosis in a medical illness. Our study will assess the psychiatric co-morbidities in the females, correlate it with the severity of the disease and study the impact on quality of life of the females with hypertensive disorders of pregnancy which in turn may lead to improved preventive strategies and targeted interventions.

6.2 REVIEW OF LITERATURE

Hypertensive disorders of pregnancy are associated with various psychiatric comorbidities in females and also in turn affect their quality of life.

A study from Germany used Composite International Diagnostic Interview for Women (CIDI-V, Martini et al .2009) to assess the associations of anxiety disorders, depressive disorders and body weight with hypertension during pregnancy. The study sample had N=306 women from early pregnancy(10-12 weeks of gestation) until four months postpartum in approximately two- monthly intervals and additionally one year later. It was observed that women with comorbid anxiety and depression had a 2.3 higher chance of being affected by arterial hypertension than women without anxiety and depression.[1]

A cohort study was done on 2,601 pregnant women to assess the preeclampsia risk in relation to maternal mood and anxiety disorders diagnosed before or during early pregnancy. Maternal pregestational and early pregnancy (before completion of 20 weeks gestation)psychiatric diagnoses were ascertained from clinical records and participants' self reported medical histories and it was observed that a positive history of maternal mood or anxiety disorder was associated with a 2.12 fold increased risk of preeclampsia after adjustment for age, race/ ethnicity, and pre-pregnancy body mass index.[3]

Gestational hypertension also referred to as Pregnancy Induced Hypertension (PIH) is a condition characterized by high blood pressure during pregnancy. Hypertension during pregnancy affects about 6-8% of pregnant women.[9] The following are the 3 common types of hypertensive disorders of pregnancy:

1) Chronic Hypertension– Women who have high blood pressure (over 140/90) before pregnancy, early in pregnancy (before 20 weeks), or continue to have it after delivery.[9]

2) Gestational Hypertension– High blood pressure that develops after 20 weeks in pregnancy and goes away after delivery.[9]

3) Preeclampsia - (i) sustained blood pressure of ≥140/90 mm Hg with readings performed ≥6 h apart and (ii) urine protein concentration of ≥30 mg/dl or 1+ on a urine dipstick on ≥2 urine specimens collected ≥4 h apart after 20 weeks of gestation.[3]

A cross sectional study was conducted on 200 (n = 200) pregnant women in obstetric wards of hospital of Madhya Pradesh. Mainly two districts; were taken in the study; Bhopal and Betul. Pregnancy Anxiety Scale was used to assess the association of pregnancy anxiety and the risk of hypertension during pregnancy. Control group consisted women without hypertensive disorder, uncomplicated by pregnancy induced hypertension or proteinuria. It comprised of 100 pregnant women without hypertensive disorder matched on age, educational level, marital status, family type, income and other relevant variables. It was observed that women with Hypertensive disorders had higher level of anxiety (M = 1.40, SD = 0.57) in comparison to the control group (M = 1.11, SD = 0.34).[10]

A prospective longitudinal study was done for evaluation of the prevalence and risk factors for posttraumatic stress disorder (PTSD) in women with preeclampsia (PE) or preterm premature rupture of membranes (PPROM) compared to uncomplicated pregnancies and it was found that pregnancies complicated by PE or PPROM are associated with PTSD in a substantial number of women.[11]

A study was done to to evaluate perceived lifetime stress (LS), perceived stress during pregnancy (PS), chronic hypertension (CH) and their joint association with preeclampsia risk. The study included 4,314 women who delivered a singleton live birth at the Boston Medical Center from October 1998 through February 2008 and it was found that LS, SP and CH were each associated with an increased risk of preeclampsia. Compared with normotensive pregnancy with low LS, both normotensive pregnancy with high LS and pregnancy with CH and low LS showed an increased risk of preeclampsia, while pregnancy with high LS and CH yielded the highest risk of preeclampsia.[12]

Case-control study was conducted on 150 pregnant women with preeclampsia and 150 healthy pregnant women, who were all referred

to health centers and university hospitals of Mashhad in 2014 to determine the relationship between anxiety during pregnancy and the incidence of preeclampsia. A significant relationship was found between anxiety and preeclampsia (P<0.001), such that 26.7% of those with preeclampsia and 10.7% of the control group had anxiety. Participants with anxiety had 2.90 fold increased risk of preeclampsia in comparison with those without it (OR =2.90, CI95%: 1.46-4.26.[13]

A crossectional prospective study was done to assess the association between hypertension in pregnancy and women's quality of life (QoL) and the variation in the quality of life over gestational trimesters. A questionnaire was applied to 194 hypertensive pregnant women and 195 pregnant women without complications. The questionnaire was composed of two parts: socioeconomic profile and specifically QoL, using the instrument Ferrans& Powers Quality of Life Index. All QoL domains of hypertensive pregnant women had lower scores than those of pregnant women without complications, with health/functioning rated the lowest, averaging 17.63.[14]

Using a multiyear (2002–2014) nationwide inpatient sample, a population-based, cross-sectional study was conducted. Cases, behavioral and clinical covariates, and outcomes were identified using *International Classification of Disease, 9th Revision, Clinical Modification* Codes. Rates of depression and HDP (Hypertensive disorders of pregnancy) were calculated across demographics, hospital characteristics, and morbidities. Among the over 58-million hospitalizations, there were 2,346,619 (3.99%), 1,117,857 (1.90%), and 63,081 (0.11%) cases of HDP, depression, and co-occurring depression and HDP, respectively. Compared to pregnant women without depression and HDP, women with depression and HDP were 3.41 times (confidence interval [95% CI]: 3.15–3.68), 1.94 times (95% CI: 1.65–2.27), and 4.10 times (95% CI: 3.89–4.32) more likely to experience intrauterine growth restriction, stillbirth, and preterm labor, respectively, even after adjusting for potential demographic, socioeconomic, and clinical confounders. Depression- and HDP-related

hospitalizations resulted in an additional cost of over $5 billion during the study period.[15]

A prospective study was done to investigate the incidence and risk factors for PTSD in women suffering from HELLP, PE, PPROM as compared with uneventful pregnancies. Women with HELLP, PE, PPROM or uncomplicated pregnancies completed a PTSD questionnaire (PSS-SR) and a depression questionnaire (BDI-II) during pregnancy (pre-test) and six weeks postpartum (follow-up). Data regarding psychiatric history and indices of obstetric care were collected. 22 HELLP, 35 PE, 53 PPROM and 65 healthy pregnant women were included. The incidence of PTSD in follow-up test was found to be 11% for HELLP/PE and 17% for PPROM, which is significantly higher than the 3% in the uneventful pregnancies. The incidence of depression did not differ between complicated and uneventful pregnancies. A history of depression (β=.23), depressive symptoms during pre-test (β=.29) and infant death in the postpartum period (β=.29) explained almost 40% of the variance in post traumatic stress symptoms in a regression analyses.[8]

6.3 AIMS AND OBJECTIVES OF THE STUDY

1) To study the quality of life in females with hypertensive disorders of pregnancy.

2) To study the frequency of psychiatric comorbidities in females with hypertensive disorders of pregnancy.

7. MATERIALS AND METHODS

7.1 Source of Data

Study will be conducted on pregnant females with hypertensive disorders of pregnancy presenting to Dayanand Medical College & Hospital, Ludhiana over a period of one year.

7.2 METHOD OF COLLECTION OF DATA

SAMPLE COLLECTION- The study would include 100 pregnant females in age group of 20-40 years with spontaneous conception presenting with hypertensive disorders of pregnancy (cases) and 100 antenatal women with spontaneous conception at term (37-41 weeks of pregnancy) with no associated comorbidity and no obvious stressor (controls) presenting to Dayanand Medical College & Hospital, Ludhiana over a period of one year.

FOR CASES

INCLUSION CRITERIA:

1)Antenatal females with spontaneous conception presenting with hypertensive disorders of pregnancy to Dayanand Medical College & Hospital, Ludhiana (OPD+IPD) over a period of one year.

2) Age group between 20-40 years.

3) Females who have given consent for the study.

EXCLUSION CRITERIA:

1) Pregnant females with any obstetric or gynaecological disorder other than hypertensive disorder of pregnancy.
2) Subjects not willing to participate.
3) Pregnant females with any other stressors affecting their quality of life and causing psychiatric comorbidity e.g. infertility, domestic violence, marital disharmony, bad obstetrical history, professional or economic instability, diabetes mellitus.
4) Pregnant females with eclampsia.

FOR CONTROLS

INCLUSION CRITERIA

1) Antenatal women with spontaneous conception at term (37-41 weeks of pregnancy) without any associated comorbidity and any obvious stressor.

2) Age group between 20-40 years of age.

METHODOLOGY

The study will be conducted on 100 antenatal females in age group of 20-40 years with spontaneous conception presenting with hypertensive disorders of pregnancy to Dayanand Medical College & Hospital, Ludhiana (OPD+IPD) over a period of one year. Their Quality of Life will be assessed using WHO Quality Of Life –BREF scale and psychiatric comorbidities will be assessed in them using M.I.N.I. questionnaire. The data obtained would be compared with controls {antenatal women with spontaneous conception at term (37-41 weeks of pregnancy) with no associated comorbidity and no obvious stressor}.

TOOLS:

1) World Health Organisation Quality Of Life(WHOQOL)-BREF

2) Mini International Neuropsychiatric Interview Questionnaire

3) Sociodemographic proforma

1) **WORLD HEALTH ORGANISATION QUALITY OF LIFE BREF (WHOQOLBREF)**:[16] It consists of 26 items. Each item uses a Likert-type five-point scale. These items are distributed in four domains. The 4 domains of QOL are:-

(a) physical health and level of independence (seven items assessing areas such as presence of pain and discomfort; dependence on medicinal substances and medical aids; energy and fatigue; mobility; sleep and rest; activities of daily living; perceived working capacity).

(b) Psychological well being (eight items assessing areas such as bodily image and appearance, both positive and negative feelings, self esteem, higher cognitive functions and spirituality).

(c) social relationships (three items assessing areas such as social contacts, family support and ability to look after family; sexual activity).

(d) environment (eight items assessing areas such as freedom; quality of home environment; physical safety and security and financial status; involvement in recreational activity; opportunities for acquiring new information and skills, health and social care: quality and accessibility). Domain scores are scaled in a positive direction (higher scores denote higher quality of life). The mean score of items within each domain is used to calculate the domain score. Mean scores are then multiplied by 4 in order to make domain scores comparable with the scores used in the WHOQOL-100.

2)Mini International Neuropsychiatric Interview questionnaire[17]for the assessment of psychiatric co-morbidities. The Mini-International Neuropsychiatric Interview (M.I.N.I.) version 5.0.0 is a short structured diagnostic interview, developed jointly by psychiatrists and clinicians in the United States and Europe, for DSM-IV and ICD-10 psychiatric disorders. It is divided into 16 modules-identified by letters, each corresponding to a diagnostic category. With an administration time of approximately 15 minutes, it was designed to meet the need for a short but accurate structured psychiatric interview for multi-center clinical trials.

3)Sociodemographic proforma

OUTCOME

To assess the prevalence of psychiatric co-morbidities in females with hypertensive disorders of pregnancy and its impact on their quality of life. The present study will assess the burden on females with hypertensive disorders of pregnancy which may lead to improved preventive strategies and targeted interventions.

Statistical Analysis

Data will be described in terms of range; mean ± standard deviation (± SD), median, frequencies (number of cases) and relative frequencies (percentages) as appropriate. Comparison of quantitative variables will be done using Student t-test and Mann Whitney *U* test for independent samples for parametric and non-parametric data respectively. For comparing categorical data, Chi square ($\chi 2$) test will be performed and exact test will be used when the expected frequency is less than 5. A

probability value (*p* value) less than 0.05 will be considered statistically significant. All statistical calculations were done using SPSS (Statistical Package for the Social Science) SPSS 21 version statistical program for Microsoft Windows.

7.3 DOES THE STUDY REQUIRE ANY INVESTIGATIONS OR INTERVENTIONS TO BE CONDUCTED ON PATIENTS OR OTHER HUMANS OR ANIMALS? IF SO, PLEASE DESCRIBE BRIEFLY.

No

7.4 HAS ETHICAL CLEARANCE BEEN OBTAINED FROM YOUR INSTITUTION IN CASE OF 7.3?

Attached herewith

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SOCIODEMOGRAPHIC PROFORMA

S. No. DATE-

DATE OF ADMISSION-

NAME-

AGE- A) 20-25 YEARS B)25-30 YEARS C) 30-35 YEARS D)35-40 YEARS

MRD NO. -

PERIOD OF GESTATION (weeks)-

PATIENT'S EDUCATION- A) ILLITERATE B) UPTO MATRICULATION
C) MATRICULATION D) HIGHER SECONDARY/DIPLOMA
E) GRADUATE/POSTGRADUATE

OCCUPATION-

A) SKILLED B) SEMISKILLED C)PROFESSIONAL D) HOMEMAKER

HUSBAND'S PROFILE

NAME-

AGE-

EDUCATION-

A) ILLITERATE B) UPTO MATRICULATION C)MATRICULATION D)HIGHER SECONDARY E)GRADUATE / POSTGRADUATE

OCCUPATION –A) SKILLED B) SEMISKILLED C)PROFESSIONAL
D)UNEMPLOYED E) RETIRED

MONTHLY INCOME (HUSBAND+WIFE)-

ADDRESS- CONTACT NO.-

LOCALITY- A) RURAL B) URBAN

TYPE OF FAMILY- A)NUCLEAR B)EXTENDED C)JOINT D) OTHER

SIGNATURE OF SUPERVISOR **SIGNATURE OF CANDIDATE**

STRESSOR	YES	NO
INFERTILITY		
BAD OBSTETRICAL HISTORY		
DOMESTIC VIOLENCE		
MARITAL DISHARMONY		
PROFESSIONAL INSTABILITY		
ECONOMIC INSTABILITY		
DIABETES MELLITUS		

HYPERTENSIVE - YES/NO

CURRENT BP-

GESTATIONAL AGE AT DETECTION OF HYPERTENSION-

A) <20 WEEKS B) 20-24 WEEKS C) 25-28 WEEKS D) 29-32 WEEKS E) 33-36 WEEKS

MEDICATIONS ADMINISTERED- ORAL/ INTRAVENOUS

HYPERTENSIVE DISORDER OF PREGNANCY

A) GESTATIONAL HYPERTENSION B) CHRONIC HYPERTENSION

C)PREECLAMPSIA

PSYCHIATRIC COMORBIDITY IF ANY (ASSESSED BY M.I.N.I)-

SCORE (WHOQOL BREF)-

SIGNATURE OF SUPERVISOR **SIGNATURE OF CANDIDATE**

M.I.N.I.

MINI INTERNATIONAL NEUROPSYCHIATRIC INTERVIEW

English Version 5.0.0

DSM-IV

USA: **D. Sheehan, J. Janavs, R. Baker, K. Harnett-Sheehan, E. Knapp, M. Sheehan**
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DISCLAIMER

Our aim is to assist in the assessment and tracking of patients with greater efficiency and accuracy. Before action is taken on any data collected and processed by this program, it should be reviewed and interpreted by a licensed clinician.

This program is not designed or intended to be used in the place of a full medical and psychiatric evaluation by a qualified licensed physician – psychiatrist. It is intended only as a tool to facilitate accurate data collection and processing of symptoms elicited by trained personnel.

M.I.N.I. 5.0.0 (July 1, 2006)

Patient Name:		*Patient Number:*	
Date of Birth:		*Time Interview Began:*	
Interviewer's Name:		*Time Interview Ended:*	
Date of Interview:		*Total Time:*	

	MODULES	TIME FRAME	MEETS CRITERIA	DSM-IV	ICD-10	
A	MAJOR DEPRESSIVE EPISODE	Current (2 weeks)	☐	296.20-296.26 Single	F32.x	☐
		Recurrent	☐	296.30-296.36 Recurrent	F33.x	☐
	MDE WITH MELANCHOLIC FEATURES Optional	Current (2 weeks)	☐	296.20-296.26 Single	F32.x	☐
				296.30-296.36 Recurrent	F33.x	☐
B	DYSTHYMIA	Current (Past 2 years)	☐	300.4	F34.1	☐
C	SUICIDALITY	Current (Past Month)	☐			☐
		Risk: ☐ Low ☐ Medium ☐ High				
D	MANIC EPISODE	Current	☐	296.00-296.06	F30.x-F31.9	☐
		Past	☐			
	HYPOMANIC EPISODE	Current	☐	296.80-296.89	F31.8-F31.9/F34.0	☐
		Past	☐			
E	PANIC DISORDER	Current (Past Month)	☐	300.01/300.21	F40.01-F41.0	☐
		Lifetime	☐			
F	AGORAPHOBIA	Current	☐	300.22	F40.00	☐
G	SOCIAL PHOBIA (Social Anxiety Disorder)	Current (Past Month)	☐	300.23	F40.1	☐
H	OBSESSIVE-COMPULSIVE DISORDER	Current (Past Month)	☐	300.3	F42.8	☐
I	POSTTRAUMATIC STRESS DISORDER	Current (Past Month)	☐	309.81	F43.1	☐
J	ALCOHOL DEPENDENCE	Past 12 Months	☐	303.9	F10.2x	☐
	ALCOHOL ABUSE	Past 12 Months	☐	305.00	F10.1	☐
K	SUBSTANCE DEPENDENCE (Non-alcohol)	Past 12 Months	☐	304.00-.90/305.20-.90	F11.1-F19.1	☐
	SUBSTANCE ABUSE (Non-alcohol)	Past 12 Months	☐	304.00-.90/305.20-.90	F11.1-F19.1	☐
L	PSYCHOTIC DISORDERS	Lifetime	☐	295.10-295.90/297.1/	F20.xx-F29	☐
		Current	☐	297.3/293.81/293.82/ 293.89/298.8/298.9		
	MOOD DISORDER WITH PSYCHOTIC FEATURES	Lifetime	☐	296.24/296.34/296.44	F32.3/F33.3/	☐
		Current	☐	296.24/296.34/296.44	F30.2/F31.2/F31.5 F31.8/F31.9/F39	☐
M	ANOREXIA NERVOSA	Current (Past 3 Months)	☐	307.1	F50.0	☐
N	BULIMIA NERVOSA	Current (Past 3 Months)	☐	307.51	F50.2	☐
	ANOREXIA NERVOSA, BINGE EATING/PURGING TYPE	Current	☐	307.1	F50.0	☐

O	GENERALIZED ANXIETY DISORDER	Current (Past 6 Months)	☐	300.02	F41.1	☐
P	ANTISOCIAL PERSONALITY DISORDER Optional	Lifetime	☐	301.7	F60.2	☐

Which problem troubles you the most? Indicate your response by checking the appropriate check box(es).

GENERAL INSTRUCTIONS

The M.I.N.I. was designed as a brief structured interview for the major Axis I psychiatric disorders in DSM-IV and ICD-10. Validation and reliability studies have been done comparing the M.I.N.I. to the SCID-P for DSM-III-R and the CIDI (a structured interview developed by the World Health Organization for lay interviewers for ICD-10). The results of these studies show that the M.I.N.I. has acceptably high validation and reliability scores, but can be administered in a much shorter period of time (mean 18.7 ± 11.6 minutes, median 15 minutes) than the above referenced instruments. It can be used by clinicians, after a brief training session. Lay interviewers require more extensive training.

INTERVIEW:

In order to keep the interview as brief as possible, inform the patient that you will conduct a clinical interview that is more structured than usual, with very precise questions about psychological problems which require a yes or no answer.

GENERAL FORMAT:

The M.I.N.I. is divided into **modules** identified by letters, each corresponding to a diagnostic category.
•At the beginning of each diagnostic module (except for psychotic disorders module), screening question(s) corresponding to the main criteria of the disorder are presented in a **gray box.**
•At the end of each module, diagnostic box(es) permit the clinician to indicate whether diagnostic criteria are met.

CONVENTIONS:

Sentences written in « normal font » should be read exactly as written to the patient in order to standardize the assessment of diagnostic criteria.

Sentences written in « CAPITALS » should not be read to the patient. They are instructions for the interviewer to assist in the scoring of the diagnostic algorithms.

Sentences written in « **bold** » indicate the time frame being investigated. The interviewer should read them as often as necessary. Only symptoms occurring during the time frame indicated should be considered in scoring the responses.

Answers with an arrow above them (➡) indicate that one of the criteria necessary for the diagnosis(es) is not met. In this case, the interviewer should go to the end of the module, circle « **NO** » in all the diagnostic boxes and move to the next module.

When terms are separated by a *slash (/)* the interviewer should read only those symptoms known to be present in the patient (for example, question H6).

Phrases in (parentheses) are clinical examples of the symptom. These may be read to the patient to clarify the question.

RATING INSTRUCTIONS:

All questions must be rated. The rating is done at the right of each question by circling either Yes or No. Clinical judgment by the rater should be used in coding the responses. The rater should ask for examples when necessary, to ensure accurate coding. The patient should be encouraged to ask for clarification on any question that is not absolutely clear.

The clinician should be sure that each dimension of the question is taken into account by the patient (for example, time frame, frequency, severity, and/or alternatives).
Symptoms better accounted for by an organic cause or by the use of alcohol or drugs should not be coded positive in the M.I.N.I. The M.I.N.I. Plus has questions that investigate these issues.

For any questions, suggestions, need for a training session, or information about updates of the M.I.N.I., please contact :

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WHO/MSA/MNH/PSF/97.4
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Distr.: Limited

WHOQOL-BREF

PROGRAMME ON MENTAL HEALTH
WORLD HEALTH ORGANIZATION
GENEVA

For office use only

	Equations for computing domain scores	Raw score	Transformed scores*	
Domain 1	(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	=	4-20	0-100
Domain 2	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) ☐ + ☐ + ☐ + ☐ + ☐ + ☐	=		
Domain 3	Q20 + Q21 + Q22 ☐ + ☐ + ☐	=		
Domain 4	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	=		

* Please see Table 4 on page 10 of the manual, for converting raw scores to transformed scores.

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INFORMED PATIENT CONSENT

Date: _____

I.....D/o, W/o, S/o..... .....am willing to participate in the study **"A STUDY OF QUALITY OF LIFE AND PSYCHIATRIC COMORBIDITIES IN FEMALES WITH HYPERTENSIVE DISORDERS OF PREGNANCY"** The procedure with its complications has been explained to me in local vernacular language. I have fully understood that no special tests and extra expenditure in any form, merely for the purpose of thesis is being carried out. I am free to opt out the study any time without assigning any reason.

....

Signature of the Witness Signature of the patient

Name:

Signature of Candidate **Signature of Supervisor**

फार्म अनुमति मरीज

तिथि_____

मैं_____ पत्नी/पुत्र/ पुत्री _____ निवासी _____ इस शोधकार्य **"A STUDY OF QUALITY OF LIFE AND PSYCHIATRIC COMORBIDITIES IN FEMALES WITH HYPERTENSIVE DISORDERS OF PREGNANCY"** में भाग लेने के लिए सहमत हूँ। मैं इस शोधकार्य में भाग लेने के लिए अपनी स्वेच्छा से तैयार हूँ। मैं पुष्टि करता/करती हूँ की यह स्वीकृति देने के लिए मुझे कोई आर्थिक प्रलोभन नहीं दिया गया और न ही दबाव डाला गया है। मुझे इस शोधकार्य का उद्देश्य स्पष्ट कर दिया गया है और मुझे यह विश्वास है की यह विज्ञान और मानवता के लाभ के लिए है। मुझे इस शोधकार्य में होने वाले जोखिम के बारे में समझा दिया गया है और मेरी समझ में यह जोखिम बहुत मामुली है।

मैं इस शोधकार्य में भाग लेने के सम्बन्ध में किसी भी समय अपनी अस्वीकृति व्यक्त कर सकता/सकती हूँ और मेरे अस्वीकृति व्यक्त करने का मेरे इलाज पर कोई प्रभाव नहीं पड़ेगा।

_____
हस्ताक्षर के गवाह
नाम:

_____
हस्ताक्षर के रोगी/ निशान का अंगूठे
नाम:

_____
अन्वेषक रकेहस्ताक्ष

_____
हस्ताक्षर के विद्यार्थी

ਮਰੀਜ਼ ਰਜ਼ਾਮੰਦੀ ਫਾਰਮ

ਮਿਤੀ_____

ਮੈ_____ਪਤਨੀ/ਪੁੱਤਰ/ਪੁੱਤਰੀ_____

ਵਾਸੀ _____

"A STUDY OF QUALITY OF LIFE AND PSYCHIATRIC COMORBIDITIES IN FEMALES WITH HYPERTENSIVE DISORDERS OF PREGNANCY" ਤੇ ਚਲ ਰਹੀ ਖੋਜ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਰਜ਼ਾਮੰਦ ਹਾਂ। ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਮੈ ਆਪਣੀ ਮਰਜ਼ੀ ਨਾਲ ਤਿਆਰ ਹਾਂ। ਮੈ ਇਹ ਦਸਣਾ ਚਾਹੁੰਦਾ ਹਾਂ/ ਚਾਹੁੰਦੀ ਹਾਂ ਕੇ ਇਹ ਰਜ਼ਾਮੰਦੀ ਦੇਣ ਵਾਸਤੇ ਮੈਨੂ ਕਿਸੇ ਵੀ ਤਰਾਂ ਦਾ ਲੋਭ-ਲਾਲਚ ਨਹੀ ਦਿੱਤਾ ਗਿਆ ਅਤੇ ਨਾ ਹੀ ਕੋਈ ਦਬਾ ਪਾਇਆ ਗਿਆ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਦਾ ਮਨੋਰਥ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਭਰੋਸਾ ਦਵਾਇਆ ਗਿਆ ਹੈ ਕੇ ਇਹ ਖੋਜ ਵਿਗਿਆਨ ਅਤੇ ਮਾਨਵਤਾ ਦੀ ਭਲਾਈ ਲਈ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਵਿਚ ਹੋਣ ਵਾਲੇ ਖਤਰੇ ਬਾਰੇ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਯਕੀਨ ਹੈ ਕੇ ਇਹ ਖਤਰਾ ਬਹੁਤ ਮਾਮੂਲੀ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਦਾ ਢੰਗ – ਤਰੀਕਾ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ।

ਮੈ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਬਾਰੇ ਆਪਣੀ ਰਜ਼ਾਮੰਦੀ ਕਿਸੇ ਵੀ ਸਮੇ ਵਾਪਸ ਲੈ ਸਕਦਾ ਹਾਂ/ ਸਕਦੀ ਹਾਂ ਅਤੇ ਮੇਰੀ ਰਜ਼ਾਮੰਦੀ ਵਾਪਸ ਲੈਣ ਦਾ ਮੇਰੇ ਇਲਾਜ ਤੇ ਕੋਈ ਅਸਰ ਨਹੀ ਹੋਵੇਗਾ।

_____
ਗਵਾਹ ਦੇ ਹਸਤਾਖਰ

_____
ਮਰੀਜ਼ ਦੇ ਹਸਤਾਖਰ

ਮਿਤੀ_____

ਪਤਾ _____

ਮਿਤੀ_____

ਪਤਾ _____

_____
ਨਿਰੀਖਕ ਦੇ ਹਸਤਾਖਰ

_____
ਸਿਖਿਆਰਥੀ ਦੇ ਹਸਤਾਖਰ